UNIVERSIDADE DO ALGARVE

FACULDADE DE ECONOMIA

HETEROGENEITY AND DYNAMICS IN TOURIST MOTIVATIONS EVIDENCES FROM THE ALGARVE TOURISTS' PREFERENCES

JAIME MANUEL MOLEIRO SERRA

PhD Thesis in Tourism

Research conducted under the supervision of:

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Doutoramento em Turismo

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Jaime Manuel Moleiro Serra

…….
(assinatura)

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A ti Mãe

com a minha eterna saudade…

"Mas o facto é que o mestre ensina, não persuade…"

Aristóteles in Retórica

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ABSTRACT

The present thesis is about tourism demand, more precisely about the determinants that lead motivations to drift and the real weight they have on tourists' choices. Tourism demand presents an heterogeneous pattern of evolution which is related with several internal and external determinants that promote or affect the demand for international tourism travel. Combinations of the latter determinants may help explain the current tourist behavioural pattern and future changes in tourist motivations. It is expected that motivations are related to the choice of certain destinations. Grounded in Lancaster's theory (Lancaster, 1966), mainly in its extensions to theories of choice models applied to tourism (Morley, 1992; Rugg, 1973) it begun by identifying the macro and microeconomic variables which influence international tourism demand, through quantitative research based on microeconometric methods, which allow for the assessment of choice patterns of international tourists in the Algarve. Hence, this research assesses the robustness of preference patterns over the years and draws the paths of future evolution throughout an innovative approach – the yield analysis. Results suggest that tourism demand presents heterogeneous patterns over time and that tourist motivations do not remain constant over time. The results also reflect the influence of noneconomic factors in tourism demand for international travel, as well as, the influence of pull motivations (destination attributes) on changing patterns of preferences, mainly when the repeat travel behaviour persists, as it is evidenced in the Algarve region.

Keywords: Tourist motivations, Tourist Preferences, Discrete Choice Theory, Microeconometrics, Algarve

RESUMO

A tese aborda a temática da procura turística procurando compreender as determinantes responsáveis por alterações nas preferências dos turistas internacionais e em simultâneo o contributo que tais determinantes exercem sobre as preferências dos turistas. A procura turística apresenta um padrão de evolução heterogéneo, que decorre de fatores internos e externos que promovem ou afetam a procura por viagens internacionais. Tais determinantes apresentam-se como a causa e a consequência das alterações nas preferências dos turistas (Correia, 2000; McCabe, 2000; Page, 2011 e Uysal, 1998).

Sob este pressuposto esta investigação tem como objetivo estudar a consistência temporal das preferências turísticas. Contudo, por forma a entender tais efeitos no comportamento da procura turística internacional, a investigação procurou incorporar, para além de determinantes macroeconómicos, determinantes não-económicos e/ou comportamentais (Cho, 2010; Crouch, 1994). Tal perspetiva permite uma compreensão mais aprofundada do comportamento-padrão de escolha dos turistas, nomeadamente no que se refere às suas preferências. Neste sentido, esta investigação avalia a robustez de preferências ao longo dos anos, bem como, permite aferir numa perspetiva evolutiva o comportamento da procura turística. Consequentemente é introduzida neste contexto uma análise *yield* em função das preferências da procura turística internacional no destino. Assim, os objectivos da investigação são aos seguintes:

1. Avaliar e caracterizar a procura turística internacional através de determinantes macroeconómicas. Identificar a região na qual os fluxos turísticos apresentam uma maior variabilidade (*Artigo 1*)
2. Identificar as determinantes não económicas mais importantes da procura turística internacional (*Artigo 2*);
3. Avaliar a formação de motivações/preferências e suas dinâmicas (*Artigo 3*);
4. Identificar o efeito moderador das motivações/preferências nos padrões de gastos da procura turística internacional (*Artigo 4*);
5. Avaliar o potencial e volatilidade das preferências turísticas mediante uma análise de *yield* (*Artigo 5*).

A revisão da literatura assenta na teoria de Lancaster (1966), principalmente na sua extensão para as teorias e modelos microeconómicos aplicados ao estudo da procura

turística (Morley, 1992; Rugg, 1973). Paralelamente a esta abordagem são introduzidas as teorias da motivação. Neste domínio, é possível identificar Maslow (1943) como um dos autores que mais contribuiu para as teorias da motivação. Particularmente, no caso das motivações turísticas, a pesquisa assenta a sua abordagem conceptual de acordo com os fatores *push* e *pull* desenvolvidos por Dann (1977, 1981).

Motivações e preferências são tratadas como constructos convergentes, dado que, a investigação foca-se nos atributos do destino, designados por fatores *pull* no âmbito da teoria *push* and *pull* (Crompton, 1979; Dann, 1977). Neste sentido, motivações tangíveis são assumidas como preferências (Slovic, 1995).

Além disso, é evidenciada a análise *yield*, nomeadamente na sua contribuição para definir caminhos de crescimento da procura turística internacional com base no potencial de rendimento que cada preferência, leia-se atributo do destino despoleta. Sintetizando, a pesquisa assenta os seus pilares teórico-conceptuais em Lancaster (1966) avaliando as motivações/preferências turísticas com base nos modelos de escolha discreta.

Esta pesquisa evidencia-se como sendo de natureza quantitativa, especificamente com base em métodos econométricos (Hair, Black, Babin & Anderson, 2010) e segue a metodologia tradicional para a modelação da procura turística, respeitando as seguintes etapas (Song, Witt & Li, 2009):

- Formulação das hipóteses de investigação;
- Seleção do modelo funcional a estimar;
- Recolha e organização dos dados;
- Estimação do modelo de procura;
- Teste de hipóteses e conclusões.

Com base na revisão da literatura, por forma a responder aos cinco objetivos específicos, vinte hipóteses de investigação foram formuladas, as quais se incorporam nas várias etapas de desenvolvimento da investigação. Num primeiro momento é estimado um modelo de dados em painel dinâmico contendo variáveis macroeconómicas (rendimentos, preços relativos, taxa de desemprego e consumo final

das famílias), por forma a explicar a evolução das dormidas de estrageiros em cada região turística de Portugal. Num segundo, momento é realizada uma análise de correlação entre as dormidas de estrangeiros na região do Algarve (2007-2010) e um conjunto de variáveis comportamentais e sociodemográficas (experiência de visita anterior ao destino, grau de satisfação, grau de importância por atributos do destino; intenção de regresso e intenção de recomendação de visita). Seguidamente foi analisada a formação das preferências turísticas tendo em conta o perfil sociodemográfico e tripográfico do turista, no período temporal (2007-2010), mediante a estimação de modelos de regressão ordinal (*ordered probit*).

Num quarto momento da investigação, recorreu-se à estimação de uma regressão múltipla que pretendia demonstrar o efeito moderador das preferências turísticas nos padrões de gastos da procura turística, que pretendia identificar a heterogeneidade por mercados e preferências. Consequentemente tal evidência acentua um dos propósitos de partida da investigação, que é fundamentado por Pearce e Caltabiano (1983) a propósito do carácter dinâmico das preferências turísticas. Finalmente, num último momento da investigação adotou-se a análise de *yield* com o objetivo de descrever a forma como as preferências turísticas podem potenciar o desenvolvimento do turismo no Algarve, quer em termos económicos (expressos pelos padrões de gastos turísticos), quer por via dos fluxos turísticos (expresso em número de noites).

As questões de investigação que sustentam o início da investigação são: - Qual a região em que a procura turística internacional apresenta maior dinâmica?; - Como são formadas as suas preferências turísticas?; - Como as suas preferências potenciam a procura turística internacional no destino?. Neste sentido, os resultados sugerem que o Algarve é o destino em Portugal que revela maior maturidade, demonstrando maior capacidade em captar e reter turistas internacionais. A procura turística no Algarve é explicada pelo volume do consumo final das famílias, sugerindo que o turismo no sul de Portugal é percebido como um bem de luxo. Além disso a região do Algarve é um destino de repetição. Os resultados evidenciam que numa segunda visita, mesmo que a estada seja mais curta, os turistas apresentam maiores gastos com o intuito de satisfazer necessidades de diversificar a sua experiência no destino. Contudo, do ponto de vista da formação das suas preferências, os resultados evidenciam heterogeneidade dependendo

da nacionalidade dos turistas. Neste sentido, é evidente a persistência de preferências relacionadas pelos atributos tangíveis, nomeadamente, limpeza do destino, alojamento, preço e gastronomia. Alguns mercados evidenciam preferências de caráter mais intangível, tais como, informação, cultura e hospitalidade. No geral estes resultados sugerem que a procura turística deve ser avaliada com base num paradigma socioeconómico. Este aspeto é ainda reforçado pelo potencial que algumas preferências turísticas registam, nomeadamente, a hospitalidade, o golf, a gastronomia e as excursões no destino, seja pelo aumento da estada ou pelos padrões de gastos no destino.

As implicações teóricas surgem ao nível de uma melhor compreensão acerca dos comportamentos de escolha dos turistas que são promovidos não só por determinantes económicas mas também por determinantes comportamentais. Algumas limitações devem-se, por um lado à não inclusão de uma análise *yield* das preferências por nacionalidade, e por outro lado à necessária consideração de uma análise da procura turística internacional tendo em conta o efeito sazonal.

Palavras-Chave: Motivações Turísticas; Preferências Turísticas, Teoria da Escolha Discreta, Microeconometria, Algarve

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CHAPTER 1

INTRODUCTION

1.1 Statement of the research problem and purposes of the research

Tourism is an economic and social phenomena and its expression is more evident since the second half of the 20th century. Although the transformations brought by the era of globalization provide new challenges, tourism has observed a steady growth since 1950, both in the number of international arrivals to airports and in economic revenue. According to UNWTO (2013) in 2012, worldwide airports received around 1.035 million international tourist arrivals, which were responsible for an economic revenue of 1.075 billion Dollars. These figures, when compared to the 25 million international tourist arrivals in worldwide airports and a total of 2 billion Dollars revenue in 1950, illustrate clearly the magnitude of this phenomenon.

The emergence of new destinations, the large competition and the growing dynamics of the tourists' demand are some of the challenges that marketers have to face. Studying the patterns of tourism demand, in particular through a dynamic perspective, is a key factor for the management and development of tourism. Tourism is a dynamic and complex phenomenon, with a large component of this complexity depending on the sharp increase in travelling. In the meantime, this is also explained by the considerable challenges that tourism faces nowadays. Page (2011) analyses consumer trends that affect tourist's choices and consumption, which may shape the quality and nature of tourism demand over the next decade, which at the same time are a consequence of the daily information that tourists receive. According to Page (2011: 77),

> "(...) the tourism industry will be faced with more discerning clients, a proportion of whom will be willing to purchase a portfolio of products that appeal to their time-poor, cash-rich lifestyles (...). Consumers are more discerning of tourism purchases, irrespective of what they, and have high expectations of quality."

The present thesis focuses on tourism demand, in particular on the study of the dynamics and, the heterogeneity of tourist behaviour, mainly concerning their motivations/preferences in order to explain evolution patterns of international tourism demand. Demand is the reason for having supply. Demand is all about needs and motivations. Individuals demand products/services when they feel that something could be improved if they could have the product or the service. That means that products

have utility that is conferred by its attributes (Lancaster, 1966). Following Lancasters' axiom it is assumed that the attributes of a product or, the attributes of a destination are the starting point of tourists' choice. From an economic perspective the set of attributes that moderate tourism demand are defined as preferences (Decrop, 2006; and Nicolau and Más, 2006), and from a socio-economic perspective this set of attributes which are supposed to confer utility to tourists are defined as motivations (Hsu, Tsai and Wu, 2009; Decrop, 1999, 2006; Goodall, 1991). As such, preferences and motivations are treated as interchangeable constructs, from a cognitive perspective (Decrop, 1999).

Furthermore, motivation/preference is a starting point in studying tourist demand (Pearce and Lee, 2005; Gunn, 1988 and Mill and Morrison, 1985). Motivations/preferences are the quest to underline what, how and why tourists decide in a certain way. Hence, tourists' motivations/preferences should be one of the major focus of any study about tourism demand. This process seems to be linear and rather simplistic, but consumer behaviour is an interdisciplinary and complex subject. As a field of study it is observed through the eyes of a number of disciplines, such as, economics, sociology, psychology and anthropology (Correia, Kozak and Tão, 2013).

Research on tourists' motivations dates back to 1960. Since this date a considerable amount of research on tourists' motivations has emerged, mainly based on Maslow's (1943) *Hierarchy of Needs*, oriented towards the psycho-social or psychological approach (Crompton and McKay, 1997; Ryan, 1997, 1998; Uysal, Gahan and Martin, 1993; Pearce and Caltabiano, 1983; Iso-Ahola, 1982). By comparison, few researchers have addressed this topic from a socio-economic perspective, e.g. Wang (2000); Rojek (1995); MacCannell (1999); Dann (1977, 1981); and Cohen (1972, 1979). Available studies on tourists' motivations rely on the explanation of the concept rather than how they moderate tourism demand. Some researchers (Law, Rong, Vu, Li and Lee, 2011; Huang and Hsu, 2009; Pearce, 2005, 2011; Pearce and Stringer, 1991; Pearce, 1988) highlighted the motivations' dynamics over the years, however few results are available on how and why motivations change over time.

It is widely consensual that tourists' motivations/preferences are an heterogeneous and dynamic constructs (e.g. Crompton and McKay, 1997; Law *et al.*, 2011; Pearce, 2011;

Pearce and Lee, 2005 and Yang, Lin and Han, 2010). Thus, the importance of motivations/preferences in determining tourism demand patterns guides the present research.

Several studies developed microeconomic models concerning choice decisions in the tourism context (e.g., Morley, 1992; Rugg, 1973), where product attributes are understood as the set of characteristics perceived by consumers. Assuming that tourists want to maximize utility, the destination will be a function of the estimated utilities of the attributes that characterize it.

The question why people are motivated to travel and what factors condition or promote the demand for international tourism travel has already been considered in the literature (see among others, e.g., Correia, Santos and Barros, 2007a; Papatheodorou, 1999; Dann, 1981). However, after identifying the motivations and given favourable and unfavourable factors concerning the demand for international tourism travel, a question remains, namely: - What is the moderation effect of tourists' motivations/preferences on demand patterns at the international tourism travel level?

Bearing in mind the need to analyse tourism demand patterns, the present research follows a microeconomic perspective through a socio-economic approach. As such, as this research is supported on socio-economic and demographic factors, tourists' demand, education, occupation, motivations/preferences, behavioural intentions, budget and time constrains are also considered (Dwyer, Forsyth, and Dwyer, 2010).

Portugal has quite different touristic contexts, from which Algarve is one of the most important and dynamic tourism destinations in Portugal. This region received 14,822 million overnight stays in 2013, from which 11,405 are international tourists and 3,416 are domestic (Turismo de Portugal, IP, 2014). As this research attempts to assess dynamic patterns in tourists' motivations/preferences, it should focus on the region that present the longest standing tradition of repeat tourist visits, as is the case of Algarve. As such this research focused the Algarve. Paper 1 reinforces this conclusion since "(...) comparing the estimated coefficients, we observe that the result achieved by the Algarve (0.6992), suggests that around 70% of total international overnight stays are

attributable to international visitors that persist to repeat their visit to this region, which shows evidence of strong loyalty to this destination.".

1.2 Aims of the thesis

International tourism demand presents an heterogeneous pattern of evolution. This is related to internal and external determinants of tourism demand. These determinants are the cause and the consequence of the dynamics of tourists' motivations/preferences (Correia, 2000; McCabe, 2000; Page, 2011 and Uysal, 1998). Under this assumption present research aims to explore what determinants lead motivations/preferences to drift and what is the real weight they have on tourist demand. To understand the evolution of international tourism demand, the analysis needs to go beyond micro and macroeconomic variables, as noneconomic factors (Cho, 2010; Crouch, 1994) may allow for a deeper and rich understanding of the demand pattern of the tourists, namely concerning their preferences. Hence, this research assesses the robustness of preference patterns over several years and draws the paths of future evolution throughout an innovative approach – the yield analysis. Under this framework this research has the following objectives:

1. *Assessing and characterizing tourism demand through macroeconomic determinants. Depict the region wherein the tourists' flows vary the most (covered in Paper 1);*
2. *Depict the most important non-economic determinants (covered in Paper 2);*
3. *Assess preferences formation and dynamics (covered in Paper 3);*
4. *Identify how tourist motivations/preferences moderate the spending patterns of international tourism demand (covered in Paper 4);*
5. *Assessing the preferences potential through yield analysis and its volatility (covered in Paper 5).*

These objectives were defined based on the literature review, nevertheless as this research grounds on socio-economic theory, theoretical insights should be outlined, even though some of them are not completely explained in the papers due to word limitation. The following section presents the major theoretical grounds of this thesis.

1.3 Theoretical framework

The present research is grounded in Lancaster's (1966) theory, mainly in its extension of microeconomic models applied to tourism demand (Morley, 1992; Rugg, 1973). Additionally motivation theories are also framed. According to the literature, it is possible to identify Maslow (1943) as one of the main contributors to motivation theories. Particularly, in case of tourist motivations, the Push and Pull theory will be covered (Dann, 1977, 1981). Nevertheless motivation is one of many variables that may contribute to explain the behaviour of the human being, but its remarkable importance relies in its capacity to be the driving force from which all human behaviour urges. Further the yield theory is highlighted in particular in what concerns its contribution to define the growing paths of tourism demand.

1.3.1 Lancaster's theory

The theory of rational choice is the underlying theory that posits that all purchasing decisions are individual (Thaler, 1980). It assumes that all consumers enter the market with well-defined preferences. Rational choice assumes that all consumer decisions are rational, which means that individuals choose the best basket based on their ability to rank their preferences. Individuals tend to maximize the utility of the "basket" they can purchase, bearing in mind the need for diversity and budget constraints (Correia *et al.*, 2013). Lancaster (1966) advanced that the utility of products are a function of their characteristics. In other words, there are properties or characteristics of goods from which utility is derived. As such, consumption is an activity where goods are viewed as a combination of all their properties or characteristics. In the case of tourism, consumption of tourist products is perceived as an amalgam of several composite components that are constituted by a collection of characteristics of the destination. Thus, tourism products are composed of tangible and intangible components which, when combined, produce for the tourist the possibility of consuming a combination of several characteristics of the destination (e.g. the Sun and Sea product is composed by sand, sea and sun, but also by culture, gastronomy and other tourist and non-tourist facilities). However, the characteristics of the landscape, local culture, weather and host community provide specific features that explain the motivation to consume this product at a particular destination.

The consumer maximizes a function of ordinal preferences, *U(z)* where z is a vector of attributes subject to income constrain $px \leq K$, where p is a vector of prices of each good and *K* is the consumer income. Goods *x* are transformed in the characteristics *z*, through the relation $z = B(x)$, where *B* is a matrix $r \times n$ which transform the *n* goods in *r* characteristics.

Algebraically, the consumer´s decision considers maximizing his/her utility, subject to income constraints and products characteristics.

Maximize $U(z)$

subject to $px \leq K$ (income constraint)

with $z = B(x)$ (technology consumption function)

$z, x \geq 0.$ (1)

There are two parts which make up a consumer's complete choice, when subject to a budget constraint, $px \leq K$ a) efficient choice, which determines and delimits the boundaries of the characteristics, and b) a private choice, which determines which point on that boundary the consumer's preference lies. Underpinning this application is the critical assumption that the consumer's preferences are determined by the goods' characteristics rather than by the goods themselves, these characteristics arising from the goods in multiple forms and in fixed proportions. Thus, these possibilities have resulted in a model of great richness in heuristic explanatory and predictive power. In this way it is superior to the conventional models of consumer behaviour, and furthermore caters more easily for common-sense characteristics of real consumer behaviour that did not fit into the traditional models (Lancaster, 1966).

Later Agarwal and Ratchford (1980) pointed out the several contributions of the model, namely, that it allows to explain the role of price in determining the demand for differentiated products; provides a conceptual framework to estimate the demand elasticity and their changes in relative prices of a single product, and also provides a theoretical and economic perspective for the product choice models.

1.3.2 Modelling tourism demand

Various theories and micro-economic models which formally represent tourist decisions have been developed in the literature. The majority is in line with the proposals of Morley (1992) and Rugg (1973) which were an extension of Lancaster's (1966) theory. These authors suggest that the key elements in decision making are the attributes of the available choices. Others follow the proposals of Morey (1984, 1985) and Eymann (1995) who based their work on Becker (1965) household production function and which led them to propose that tourist satisfaction is self-produced and driven by the products they acquire (Nicolau and Más, 2006).

Correia (2000); Bull (1995) and Rugg (1973) assume that the utility is an indirect function defined as the maximum level of utility a destination can provide to a certain tourist for a given time and available income. The tourist-consumer's choice is a linear optimization problem, underlining the attributes the tourist most value (utility function), the time and the budget available to stay at the destination (Correia, 2000). As a result of the combination and/or the selection of one or more destinations, it is possible to identify the bundles or combinations of destinations that offer the same utility, which enables an approach to indifference curves developed in the ordinal and revealed preference theories. A destination or tourist "package" may possess or generate satisfactory amounts of attributes, or it may even come about that tourists have to combine elements (or complementary products) such as two or three travel modes and three or four destinations in the same trip to generate a set of attributes that satisfy them (Morley, 1992).

Tourists rank their preferences according to their perceptions, and these perceptions arise in the process of learning about the product, correlated with how the consumer receives and processes the information acquired. Consumer perceptions may vary from the true attributes of the destination due to the way consumers capture and process information, this function being is so-called technology consumption function that defines tourist preferences. Most of the models assume that the consumer has an utility function that refers to consumers' revealed preferences. However, the way the consumer receives, perceives and processes information about the attributes of the product

determines the image he/she retains and consequently his/her revealed preferences (Goodall, 1988). Further, utility maximization is subject to constraints of scarce resources which, in the case of tourism, are essentially time and income. Under these assumptions the stated preference method of assessing demand through discrete choice models was assumed.

1.3.3 Discrete choice models

Correia *et al.* (2013) highlight the fact that the work of Papatheodorou (2001), Morley (1992) and Rugg (1973), are founded on the main assumption that tourism decision-making is a rational choice process that emerges from the evaluation of several alternatives constrained by the tourist's pervasive availability of time and money in light of destination attributes (preference function). These models are based on the formation of individual preferences. However, to account for heterogeneity of tourists' preferences, inter and intrapersonal variables should be incorporated in the tourism demand functions, which led tourism research to consider discrete choice theory (Jeng and Fesenmaier 1996). Discrete Choice Theory contributes to understand demand throughout economic and cognitive psychology perspective (Correia *et al.*, 2013).

An example of this is the research conducted by Nordström (2005) that analyses international tourism demand, suggesting an utility function which is both dynamic and stochastic. Therefore, the model presents a stochastic component given by random changes in preferences for goods and services, whilst the dynamic component could be interpreted as either habit formation or as independent preferences. The model suggests that tourists have a preference structure that is associated with product attributes and their needs. According to this, Nordström (2005: 382) suggested that preferences can be represented by a two-level utility function:

$$U(q) = F\,[U^1(q_1), \ldots, U^m(q_m)] \qquad (2)$$

where, the subutility function $U^j(q_j)$, j=1...., m is specified by means of a concave and symmetrical function (e.g. Nordström citing Dixit and Stiglitz, 1977). The subutility function consists of goods and services (such as tourism) consumed in the *jth* country. It is noted that Nordström's model incorporated past consumption in the utility function,

because it was assumed that this parameter represents the previous consumption of the same destination or a recommendation of friends and relatives. A second innovative introduction in the utility function was based on the assumption that tastes for different products may change over time. Thus, the utility function may be defined as a stochastic function. As stated by Correia *et al.* (2013: 300),

> "Discrete choice theory arose with contributions from economists and cognitive psychologists. Discrete choice problems involve choices between two or more discrete alternatives, such as going or not going on holiday, or choosing between destinations. Such choices contrast with standard consumption models in which the quantity of each good consumed is assumed to be a continuous variable. In a continuous case, demand can be modelled using regression models. Regression models allow us to answer 'how much' type questions. In discrete choice problems the outcome is discrete and therefore discrete choice models should be applied; hence discrete choice models help us to answer 'which' type questions. Two streams of discrete choice models could be considered: revealed and stated preferences approaches."

Discrete choice models may rely on revealed and stated preferences. Nicolau and Más (2006) put forward that there are traditionally two ways to study tourists' behaviour, in particular the way in which they process, assess and combine information until the decision making. The basis for the first way is to analyse *real choices* made by individuals (Ben-Akiva and Lerman, 1985). This method assumes that *preferences* exist, although it is impossible for the analyst to quantify these preferences, since those preferences are only evident in the final purchase choice. This approximation has therefore been termed the *Revealed Preference* approach.

The second approach uses hypothetical choice alternatives, and subsequently analyses the ranking or scoring that individuals give to them. This approximation is rooted in Information Integration Theory and in Social Judgement Theory, and makes the assumption that the individual making the decision is capable of ranking alternatives according to his/her preferences (Batsell and Louviere, 1991; Timmermans and Golledge, 1990). This contrasts with the first approach in that the analyst is working only with a *declaration of intent* based on preferences (i.e. declared a preference structured under a specific scenario), and not the real purchase choice. This

approximation has therefore been termed the *Stated Preferences* approach (Nicolau and Más, 2006).

According to Correia *et al.* (2013), stated preference experiments which take intrapersonal determinants into consideration are less frequently used, and these rare applications tend only to include socio-demographic variables (Riera, 2000; Eyamn and Ronning, 1997; Morley, 1992, among others). Even rarer are those experiments which take into account variables such as trip motivations, past experience or holiday experience (Correia, *et al.*, 2007a; Eyamn and Ronning, 1997 and Fesenmaier, 1988). Being motivations/preferences the core of this research which is grounded on social economic perspectives it is fundamental to define this construct, that represents one of the most seminal constructs in economics models, which attempted to explain demand through utility.

1.3.4 From motivations to utility constructs

In economics an individual has rational expectations which look to maximize his or her needs/goals. At the same time an individual is also a cognitive being aware of available alternatives and capable of assessing them (Skinner, 1950). Human motivations can arise from exposure to internal and external stimuli and are contextually fulfilled: When the stimuli-response is reinforced, individuals are motivated to act. The reinforcing concept is in close accordance with the reward or goal concept. The similarity of approaches in consumer behaviour may represent motivational attitudes such as utility functions, qualitative abstractions of utilities and logical models of goals and desires.

The utility concept in economics is “the personal feeling of pleasure and satisfaction that individuals receive when consuming a good or service” (Mochón, 2006: 37). Motivation is the energizer of behaviour. It results from the interactions among conscious and unconscious factors such as the intensity of desire or need; the incentive or reward value of the goal, and the expectations of the individual. The comparative framework along the two concepts shows that utility and motivations differ more in the functional form than in the concept *strictu sensus* (table 1.1).

In fact economic utility theory pertains to develop an utility function that presents a quantitative probability while the qualitative approach of motivations reduces the quantitative utility to a binary variable (0 not achieve the goals, 1 achieve the goals). Other main differences in both concepts are the content of motivations and utility. Where utility focuses on attributes of the products or extrinsic motivations, motivations tend to consider not only the extrinsic motivations but also the intrinsic ones which incorporate the Psychoanalytic and the social approach based on needs that look to be resolved, whether they are social or deeper needs such as: fun, love, hope, sexuality and fantasy. In the case of tourism we should say that utility of the destination relies on the objective attributes of the destination, such as accommodation, attractions or climate.

Table 1.1- Utility and motivation concepts

Dimension	Utility	Motivation
Definition	Measurable pleasure; Satisfaction on achieving goals	Ability to setting goals which challenge internal competence optimally
Content	Extrinsic motivations	Extrinsic and intrinsic motivations
Role in decision making	Utility is an object to be maximised	Motivation is an outcome of satisfying needs
Assumptions	Utility maximisation	Optimal ability
	Extrinsic rewards determines more quantity and intensity	Internalize rewards

Source: Adapted from Correia (2009).

Tourist motivations rely on the push and pull motives defined by Crompton (1979). Push motives are the internal drives for the desire of travel and pull motives are the factors that justify the choice of a certain destination.

The research approach in tourism motivations is always related to human nature and relations, in this way the question why people choose to travel to have a certain holiday experience and what they want to enjoy is the key starting point to investigate tourist motivations. However, Pearce (2011) added that to study tourist motivations it is

necessary to have in mind that other travellers may not be driven by the same social, cultural and biological needs as the observer. According to this previous statement the importance of an emic perspective when researching motivations should be adopted as Pearce (2011) and Cohen (1979) suggested. In terms of tourism motivation researching, it is the possible that people may see the world in other ways, their needs may be different and their approach to the destination they visit may be unconventional (Pearce, 2011).

A considerable amount of research on tourist motivations has emerged, mainly based on Maslow's (1943) Hierarchy of Needs, oriented towards the psycho-social or psychological approach (Crompton, 1979; Crompton and McKay, 1997; Deci and Ryan, 2000; Iso-Ahola, 1982, Pearce, 1982, 1988, 1993, 2005, 2011; Pearce and Caltabiano, 1983; Uysal *et al.*, 1993; Ryan, 1997, 1998; Witt and Wright, 1992) and trying to answer the question, why some people have the motivation to travel and others, do not (Crompton, 1979; Dann, 1977; Plog, 1974). By comparison, the same authors referred that other researchers have addressed this topic from a sociological perspective (Wang, 2000; MacCannell, 1999; Rojek, 1995; Dann, 1977, 1981; Cohen, 1972, 1979). According to Dann (2003), in tourism research there are two disciplines that present the greatest discussion on motivation, as well as, tourist motivation, namely Psychology and Sociology. Nevertheless, other disciplines, such as Anthropology by MacCannell (1999) and Socio-Psychological by Iso-Ahola (1982) contributed to this discussion.

Further, Huang and Hsu (2009) argued that tourist motivations is a multidimensional construct determinant to explain tourists' choices, and that these motivations are dynamic. According to this, Law *et al.* (2011) stated that identifying changes and trends in international tourism in terms of future travel motivations by predicting those changes over the years through tourism predictive models could help the industry to anticipate and develop more customized tour packages. Moscardo (2001) alerted to the fact that most motivation studies have not examined the interaction between motives, values, personality and cognitive traits of tourist behaviour.

Despite the slight difference outlined by Decrop (2000), it seems widely accepted that motivations may be regarded as comprising two stages, the first is the driving force that

pushes tourists to travel and the second, related to the destination and type of holidays chosen, are the so called pull motivations that in essence reflect tourists' preferences. Under this theoretical background, pull motivations may be assumed as a proxy for preferences. The choice depends on the preferences, and these in turn are a function of information about attributes.

Motivations and preferences are treated as indistinguishable constructs since these only focus on attributes of the destination, named as pull factors in the push and pull theory (Crompton, 1979; Dann, 1977) and therefore, the tangibility of these motivations may be assumed as preferences (*see paper 5*). Slovic (1995: 364) stated that "the expression of preference by means of choice and decision making is the essence of intelligent, purposeful behavior".

The purpose of the present thesis is to study heterogeneity and dynamics in tourist motivations mainly caused by exogenous factors (e.g. destination attributes) that promote or affect the demand for international tourism travel. Understanding why people travel and change their preferences has a crucial importance for destinations and tourist companies'. More than merely identifying tourist motivations it is vital to understand their influence in the choice process of international tourism travel as well as their dynamics which are scarcely assessed in the tourism literature (see among others, Huang and Hsu, 2009; Andreu, Kozak, Avci and Cifter, 2006 and Saarinen, 2004). The assessment of these dynamics under the yield paradigm will allow us to develop a framework of preference evolution which is critical to tourism destination development.

1.3.5 Yield analysis

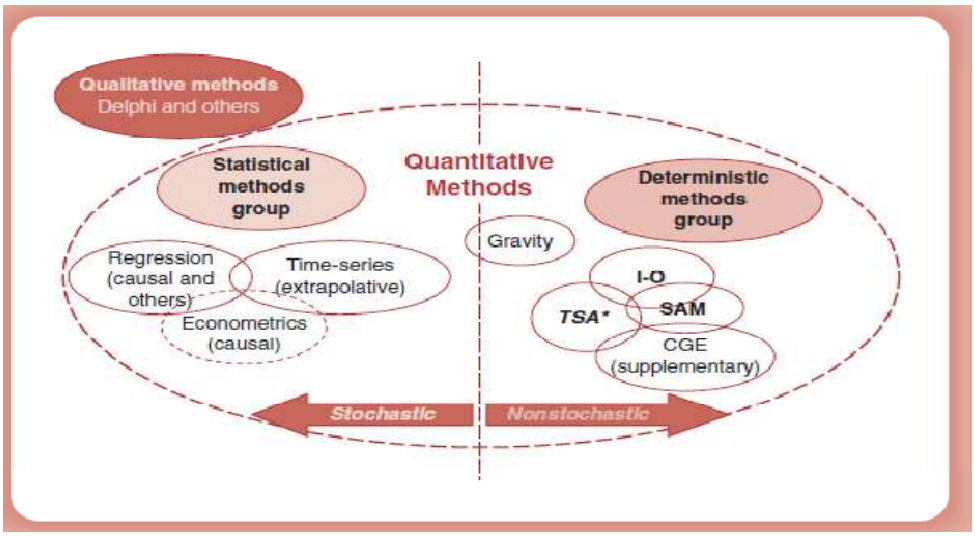
There have been several definitions of yield in the literature (see *paper 5*). From a methodological point of view, this is an extension of a nonstochastic group of methods, which belong to the class of deterministic methods (Figure 1.1). Yield analysis allows to depict the boundaries of consumer possibilities. As stated by Northcote and Macbeth (2006: 201),

> "Yield is simply the level of net return to the resource pool, with both inputs (resource use) and outputs (productivity) being considered in terms of costs and benefits. This threshold is understood as being defined by both the

required and potential limits, which refer to the minimum and maximum amounts of return required before tourism activity leads to undesired stagnation or changes."

From a macroeconomic perspective, yield analysis is an extension of results provided by an Input/Output matrix (*hereafter* I-O), Tourism Satellite Accounts (*hereafter* TSA), Computable General Equilibrium (*hereafter* CGE) and Social Accounting Matrix (*hereafter* SAM). Measurements of tourism yield at the level of the tourism industry develop according to the framework depicted in Figure 1.1.

Figure 1.1 - Overview of analytical research methods for hospitality and tourism



Source: Hara (2008: 40).

The definition of yield and its application to tourism destinations is less than clear for various reasons. Individual businesses see yield as a proxy for profit: greater yield implies greater profit. When dealing with destinations, however, different stakeholders have different views of what profit consists of and how to maximise it. A regional tourism organisation may view profit as total visitor revenue, a local council may view it as employment, and a national government may view profit in terms of tax revenue or value added. The upshot of this is that 'yield', while used generically is defined differently from stakeholder to stakeholder as each one sees 'profit' differently (Scott and Breakey, 2007).

Although previously yield was considered at a macro level, assessed yield by means of a microeconomic perspective is something that the literature claims for, due its scarce if

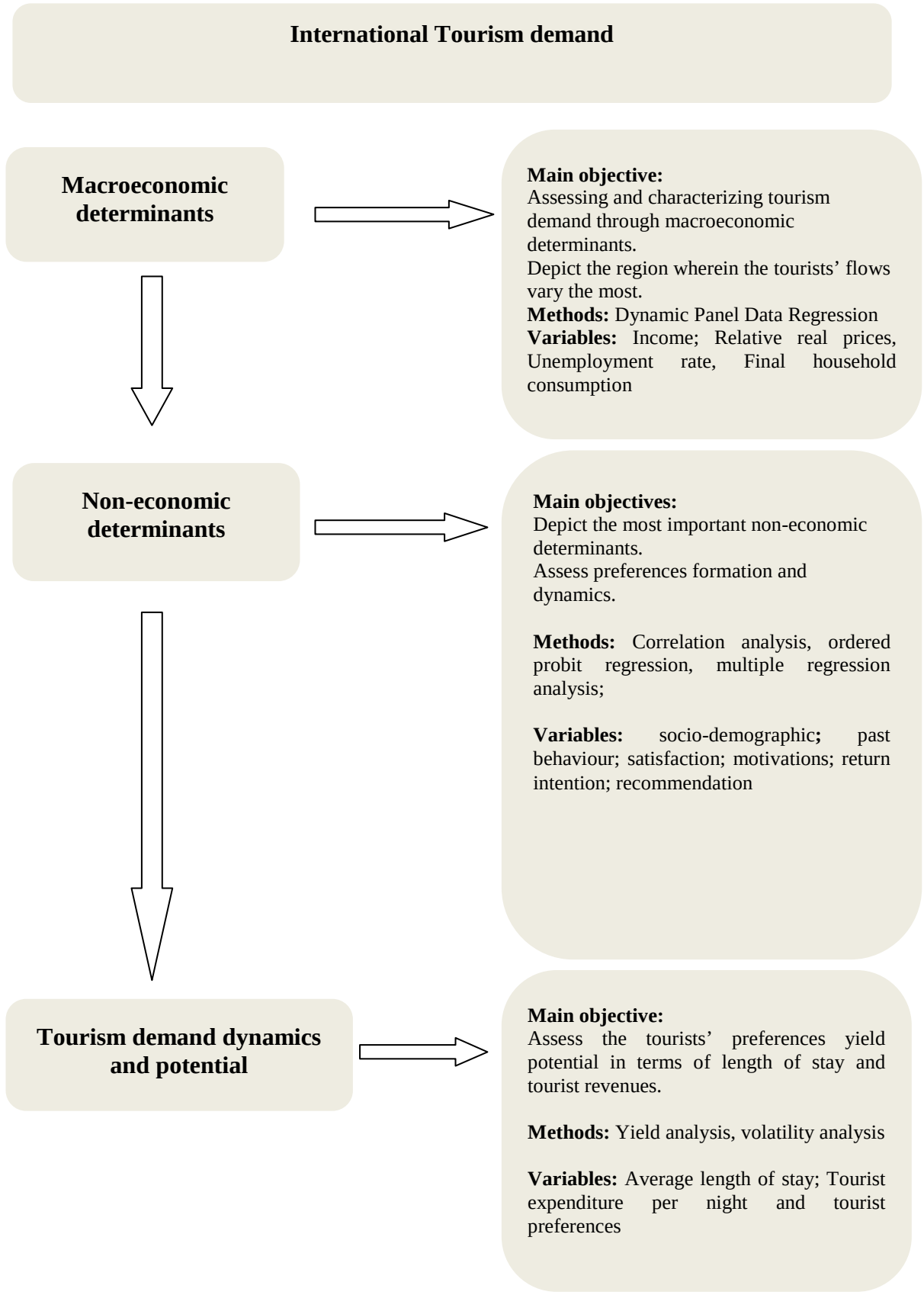
non-existent approaches (Dwyer, Forsyth and Spurr, 2007). Hence, this research approached yield analysis through primary data, provided from a survey applied to international tourists at Faro airport, to define the boundaries of tourism growth under a certain number of motivations (*see paper 5*).

The previous theoretical grounds briefly described the conceptual framework of the thesis and are depicted on the following section.

1.4 Conceptual framework

The present study assessed tourists' preferences through econometric models. First, to understand the paths of international tourism demand; second to depicted preferences formation and dynamics; third to potentiate tourism development. Economic and noneconomic factors were considered to depict tourists' behaviour patterns that are far from being only rational. Under these assumptions and accordingly with the objectives the thesis structures under the following conceptual framework (Figure 1.2.)

Figure 1.2 - Conceptual framework of the thesis



Source: Own Elaboration.

This research is based on econometric methods (Hair *et al.*, 2010) and follows the traditional methodology of tourism demand modelling (Song *et al.*, 2009), i.e.,

- Formulate the hypothesis
- Decide the model's functional form
- Collect data
- Estimate the model
- Test hypothesis and generate conclusions.

Based on the literature review and the conceptual model in Figure 1.1, twenty hypotheses, which are divided between four research proposals, frame the study according to the different stages that structured this thesis, as illustrated in Table 1.2. This figure evidences the sequence of research proposals in light of the papers produced along this research.

Table 1.2 – Research stages

Research questions	Research purpose	Hypotheses	Paper
Where tourism demand vary the most?	1. Assessing and characterizing tourism demand through macroeconomic determinants. Depict the region wherein the tourists' flows vary the most.	H1: Socio-demographic characteristics of international tourists moderate the decision to travel to each region of Portugal.	Covered in paper 1
How preferences are formed?	2. Depict the most important non-economic determinants.	H2: Socio-demographic characteristics are age, gender, marital status, level of education, income, employment status, and nationality associates with overnight stays. H3: Travel companion correlates with overnight stays. H4: Tourists' pull motivations over the years correlates with overnight stays. H5: Past visit to a destination correlates with overnight stays. H6: Overall satisfaction with past visits is positively correlated with overnight stays. H7: Return intention to destination correlates with overnight stays. H8: Individuals' attitude in recommending a destination correlates with overnight stays.	Covered in paper 2
	3. Assess preferences formation and dynamics.	H9: Past behaviour moderates preference *i* at time *t*. H10: Travel companion plays a role on preference *i* at time *t* of the visit. H11: Overall satisfaction moderates preference *i* at time *t*. H12: Previous behavioural intentions moderates preference *i* at time *t*. H13: Socio demographic variables moderates preference *i* at time *t*.	Covered in paper 3
How preferences potentiate tourism demand?	4. Identify how tourist motivations/preferences moderate the spending patterns of international tourism demand.	H14: Past visits (repeat) at the destination positively affects tourists' expenditure. H15: Travel companion positively affects tourists' expenditure. H16: Overall satisfaction with past visits positively affects tourists' expenditures. H17: Previous behavioural intentions affects tourists' spending.	Covered in paper 4 and paper 5
	5. Assessing the preferences potential through yield analysis and its volatility.	H18: Economic and Socio-demographic variables are positively and significantly related to tourist expenditures. H19: Tourist motivations/preferences positively affects tourists' spending. H20: Length of stay affects tourists' spending.	

Source: Own elaboration.

1.5 Organisation of the thesis

Figure 1.3 gives an overview of the organisation of the thesis, followed by a summary of the five Papers that constitute this thesis. This thesis is structured in seven chapters of which five correspond to papers, each of which contributes to clarify that tourism demand is more than only an economic issue. We start from the first paper that characterizes tourism demand among the different regions of Portugal, being this the first step to opt for the Algarve as the region where the research should be applied. Furthermore, this paper which uses mainly macroeconomic variables and shows that there is a great amount of tourism demand that still remains to be explained, if we observed the intercept variables (Portugal = 2.3616; Center = -25.554; North = - 4.4509; Azores = - 24.9202) suggesting that a number of factors are far beyond to be explained only by macroeconomic variables; this evidence was also suggested by Rugg (1973) and Lancaster (1966).

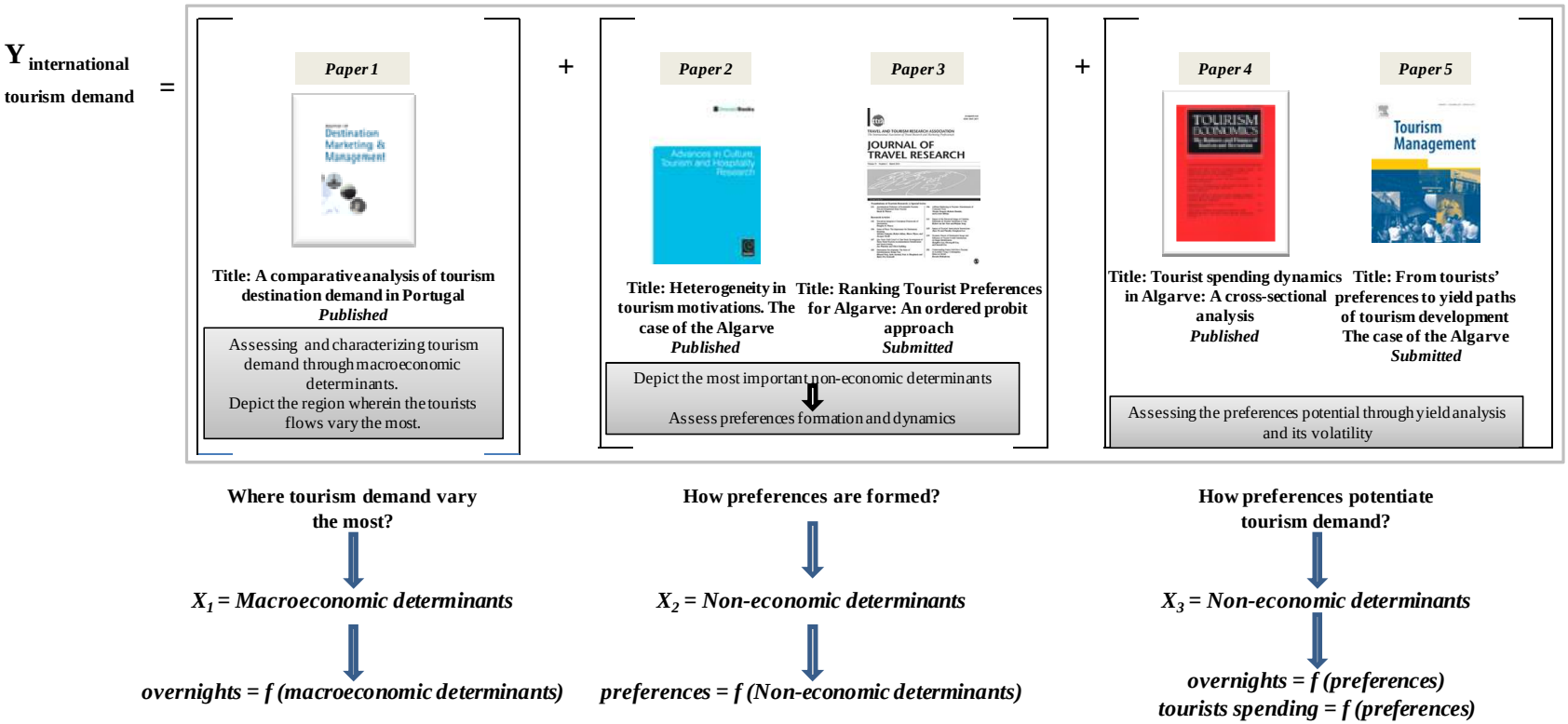
Tourism demand comprises a number of non-economic factors that should be taken into consideration (e.g., Crouch, 1994; Cho, 2010). In the same vein, Woodside (2004) argues that besides economic factors, tourists decisions are also influenced by psychological and social factors. This gives rise to the importance of discrete choice models to explain tourism demand, since it is already shown that decisions are influenced by emotions and cognition (Correia, Valle, and Moço, 2007b; Kim and Yoon, 2003; and Vogt and Andereck, 2003). Discrete choice models are able to collect and analyse interpersonal and intrapersonal differences among tourists (Jen and Fesenmaier, 1996). Discrete choice problems involve choices between two or more discrete alternatives, such as going or not going on holidays, or choosing between destinations. Such choices contrast with standard consumption models in which the quantity of each good consumed is assumed to be a continuous variable. In a continuous context, demand can be modelled using regression models. Whereas in discrete choice problems the outcome is discrete and therefore discrete choice models should be applied (Correia *et al.*, 2013).

Thus, the second paper (Chapter 3) use discrete choice models to analyse determinants of tourists' choices based on the importance of each motivation/preference. According

to Decrop (2000) pull motivations, in essence, reflect tourists preferences (*see papers 2 and 5)*. Thus tourists' preferences will increase the probability of the tourist to revisit the destination over the years. Thereafter from the set of discrete choice models we opt for ordered probit models. In the ordered probit models the response variable has more than two ordered, or ranked, categories (Cameron and Trivedi, 2010). Thus, the ordered probit model explains the possible answer that an individual may give over time based on a set of explanatory variables. Since heterogeneity of tourism demand also requires an analysis at the individual level (*see paper 2*) this paper focus on choice patterns of international tourists in the Algarve considering their motivations. By considering only tourists' motivations that presented more variability over the years this suggests that tourists' decision-making processes are also influenced by non-economic variables, as indicated by, among others, Kozak (2003); Papatheodorou (2001); Morley (1992); and Rugg (1973).

Having set the motivations/preferences, which are found as the most relevant determinants of tourism demand and the ones with more heterogeneity over the years we may proceed with predicting overnights and travel expenses by means of a multiple linear regression framework. In a first stage of analysis we estimated a set of linear regressions and in a second stage a yield analysis was adopted in order to reinforce the importance of such motivations/preferences on tourism (*see papers 3, 4 and 5*). Thus, non-economic determinants such as tourist preferences evidenced an interesting potential as a proxy of tourist yield index in order to assess expenditure patterns for tourists and consequently support an assessment of the competitiveness of destinations (*see paper 5*). The reasoning of this research and its organization is depicted in figure 1.3.

Figure 1.3 – Structure of the thesis



Source: Own elaboration.

1.6 Methodological complements

1.6.1 Overview

The present research followed a positivism research philosophy rather than a phenomenology. According to Altinay and Paraskevas (2008), positivism promotes a more objective interpretation of reality, using hard data from surveys. As mentioned before, we look to understand the dynamic behaviour of tourist motivations in the Algarve region.

Tourism is a multidimensional phenomenon and, therefore, can be analyzed from different points of view: as a multi and interdisciplinary research context. Considered as multidisciplinary research, according to Przeclawski (1993), each involved discipline uses its own concepts and methods. According to the author, only the general theme of research is the same. The background of researchers and their views on society and humanity can be quite different and therefore the results can only be analyzed at the level of each discipline and separately. Concerning interdisciplinary research, it analyzes a given problem simultaneously from different areas to take into account at the same time, different aspects of the subject. "Interdisciplinary research should be more unified and more concentrated than the multidisciplinary research" (Przeclawski, 1993: 13).

The research strategy, according to previous studies, modelled tourism demand function, that were summarized by Song *et al.* (2009). According to the authors, a traditional function for tourism demand is given by:

$$Q_{ij} = f(P_i, P_s, Y_j, T_j, A_{ij}, \varepsilon_{ij}) \quad (3)$$

where, Q_{ij} is the quantity demanded in destination *i* by tourists from country *j*; P_i is the price of tourism for destination *i*; P_s is the price of tourism for substitute destinations; Y_j is the level of income in origin country *j*; T_j are the consumer tastes in origin country *j*; A_{ij} is advertising expenditure on tourism by destination *i* in origin country *j*; ε_{ij} is a disturbance term that captures all other unobserved factors which may influence the quantity of the tourism product demanded in destination *i* by residents of origin country *j*.

Tourist arrivals/departures is the dependent variable most frequently used in international tourism demand models (Lim, 1997). However, international tourism demand is often measured either through tourist expenditure or the number of overnight stays by tourists in the destination country (see, e.g., Ibrahim, 2011; Ouerfelli, 2008). In the present study overnight stays was the dependent variable considered at *papers 1; 2 and 4*.

Since equation (3) is given as the theoretical model for tourism demand, which is a mathematical statement that indicates that there is a relationship between the variables under analysis (Song *et al.*, 2009), a specific functional form to ilustrate how tourism demand is related to these determinants is needed. Accordingly, a demand equation is used, which is a linear relationship or a power relationship between Q_{ij} and its determinants (*see: paper 4*).

Thus, the linear relationship is expressed as

$$Q_{ij} = \alpha_0 + \alpha_1 P_i + \alpha_2 P_s + \alpha_3 Y_j + \alpha_4 T_j + \alpha_5 A_{ij} + \varepsilon_{ij} \quad (3.1)$$

where the variables Q_{ij}, P_i, P_s, Y_j, T_j and A_{ij} are defined as in Equation (3); $\alpha_0, \alpha_1, \ldots, \alpha_5$ are the coefficients to be estimated; and ε_{ij} is the error term.

Song and Li (2008) and Lim (1997, 1999) summarized linear tourism demand models. Song *et al.* (2009:8) highlight the reasons that justify the adoption of this method. Mainly, plenty of "tourism demand relationships can be approximately represented by a linear relationship over the sample period under analysis". On the other hand, "the coefficients in the linear model can be estimated relatively easily".

Additionally, based on equation (3.1) it is possible to examine the sensitivity of tourism demand to changes in the explanatory variables. Demand elasticity is measured by (Song *et al.*, 2009)

$$\widetilde{\omega}_X = \frac{\Delta Q_{ij} / Q_{ij}}{\Delta X / X} = \frac{\Delta Q_{ij}}{\Delta X} \times \frac{X}{Q_{ij}} \quad (3.2)$$

where *X* denotes an independent variable and Δ denotes "the variation".
The other common functional form used in tourism demand analysis is the power model (Song *et al.*, 2009; Witt and Witt, 1995), which is expressed as,

$$Q_{ij} = XP_i^{\alpha_1} P_s^{\alpha_2} Y_j^{\alpha_3} T_j^{\alpha_4} A_{ij}^{\alpha_5} u_{ij} \quad (3.3)$$

where X, α_1, α_2, ..., α_5 are coefficients; the variables are as defined previously; and u_{ij} is the disturbance term.

1.6.2 Methodological procedures

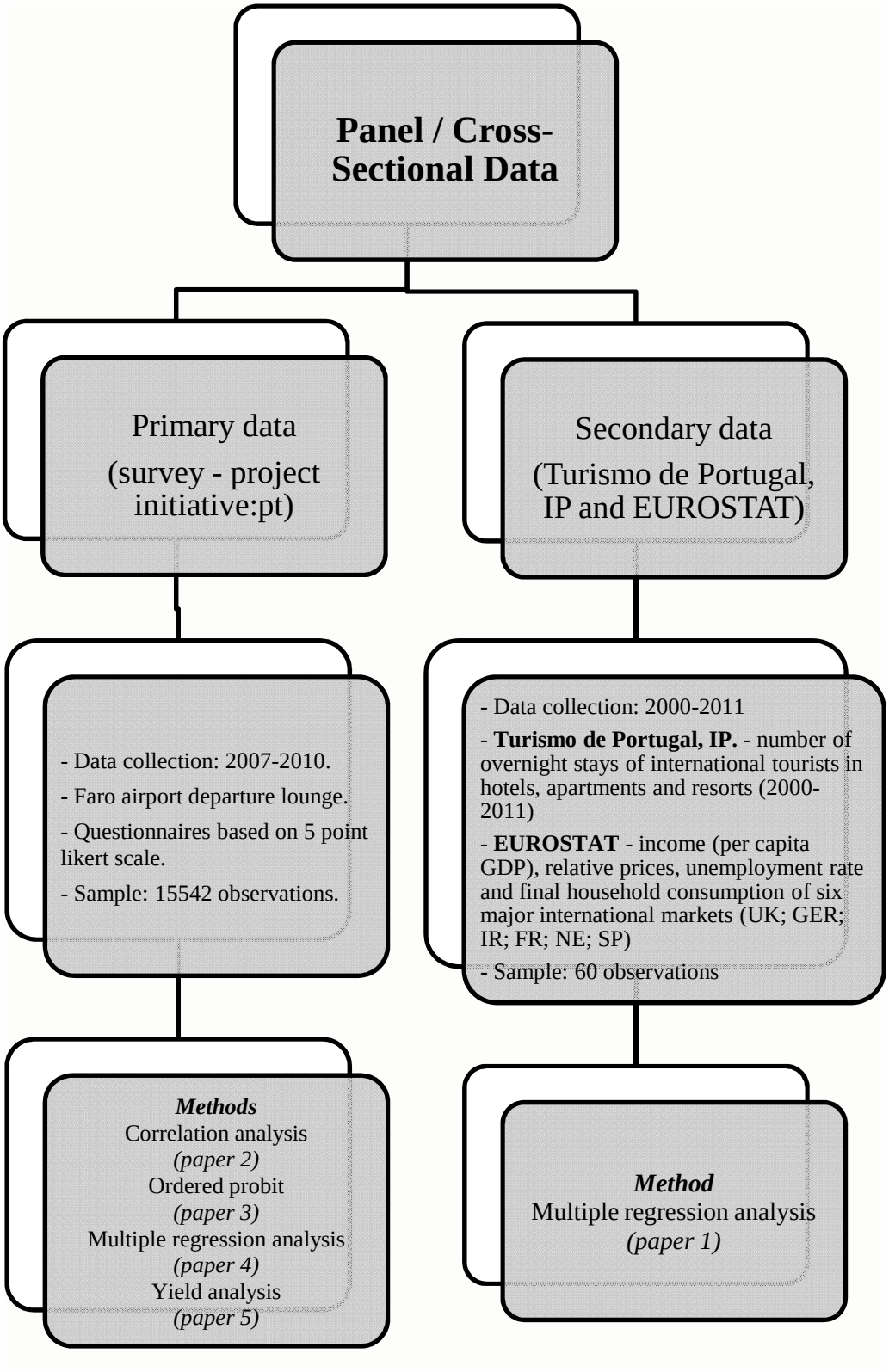
1.6.2.1 Preliminary considerations

Data is supported by two types of sources (Figure 1.4). In a first stage a small panel data was organised based on secondary data collected from Turismo de Portugal, IP and Eurostat (*see: paper 1*).

Secondly, further data was collected from the study INITIATIVE:pt[1] conducted by the entity that manage the Airports of Lisbon, Oporto, Faro, Azores and Beja (*hereafter* ANA); University of Algarve and Turismo de Portugal, IP. (*see: papers 2, 3, 4 and 5*). The time period that embodied the present study is the IATA year (2007-2010), so we opted for the calculation of the annual sample, based on number of passengers. The data was collected in the departure lounge of Faro International airport.

[1] For further information about the project see: http://www.initiative-ualg.com/ (last access on 22nd august 2013, 11a.m).

Figure 1.4 - Research methodological procedures



Source: Own elaboration.

1.6.2.2 Secondary Data: Sample, Data Collection, Estimation methods

Sample

For this research secondary data was obtained in order to develop paper 1, in which the geographical scope of the study was justified (*see: paper 1*).

The first component of the panel data set, which was international overnight stays in Portugal per region, are in appendix 1 table 1.1. This variable was considered as the dependent variable in order to estimate a dynamic panel data model (*see: paper 1*).

The other components of the panel data set were collected from EUROSTAT, which are in appendix 1 table 1.2, summarizing all the data contained in the final panel data set, and consisting with the following macroeconomic variables: per capita income (per capita GDP), relative prices index, unemployment rate and final household consumption and which were collected on a yearly base (2000-2011) for each of the six main international demand markets for Portugal. Table 1.6 (see Appendix 1) (*see: paper 1*).

In order to justify some variables adopted in the panel data model, the methodology defined by EUROSTAT from European System of Accounts 1995 (ESA95) was considered. In general, the ESA95 regulation (Council Regulation 2223/96 of 25 June 1996) may be referred to for more detailed explanations on methodology (*see* Appendix1 table 1.3).

Panel data analysis

The econometric approach typically used in the literature relies on ordinary least squares (OLS) regression analysis. However, over recent years other econometric methods have been considered, such as, for instance, the autoregressive distributed lag (ADL) model, the error correction model (ECM), the time varying parameter (TVP) model and the most ideal demand system (AIDS); see Song and Li (2008), for further details. Panel data models have had less application in tourism analysis (Song and Li, 2008) (*see: paper 1*). The use of panel data presents several advantages. As stated by Cameron and Trivedi (2010: 235),

> "Panel data or longitudinal data are repeated measurements at different points in time on the same individual unit, such as person, firm, state, or country. Regressions can then capture both variations over units, similar to regression on cross-sectional data, and variation over time".

The authors exerted that the major advantage of panel data is increased precision in estimation (*see: paper 1*).

There are different linear models for panel data. In terms of individual-effects models for the scalar dependent variable y_i , it specifies that

$$y_i = \alpha_i + x'_i\beta + \varepsilon_i \qquad (4)$$

According to Cameron and Trivedi (2005: 700), two different models considering specific assumptions for α_i are the fixed-effects and random-effects models.

Concerning the fixed-effects (*hereafter* FE) model, the α_i in (4) are allowed to be correlated with the regressors x_i. Thus, it allows for limited form of endogeneity. According to the authors the FE model implies that $E(y_i|\, \alpha_i, x_i) = \alpha_i + x'_i\beta$, assuming $E(\varepsilon_i|\alpha_i, x_i) = 0$, so that $\beta_j = \partial E(y_i|\alpha_i, x_i) \big/ \partial x_{j,\,i}$ (4.1)

The FE model allows the intercept to vary between cross-section units, so that each unit has a fixed intercept which is specific to that unit (Song *et al.*, 2009). In the random-effects (*hereafter* RE) model, it is assumed that α_i in (4) is purely random, a stronger assumption implying that α_i is uncorrelated with the regressors.

In order to test for FE and RE models, it is necessary to decide which model should be used in modelling tourism demand. The RE model can be tested directly against the FE model. Cameron and Trivedi (2010: 266) note that "under the null hypothesis that individual effects are random, these estimators should be similar because both are consistent. Under the alternative, these estimators diverge". One of these tests was proposed by Hausman (1978).

The dynamic panel data models considered in the present research, were estimated based on the Arellano-Bond (1991) procedure (*see: paper 1*).

Thus, as stated by Serra, Correia and Rodrigues (2014:224) (*see: paper 1*),

> "According to Morley (1998) if the impact of past tourism is neglected, the effect of the relevant variables will tend to be overestimated (since the estimated coefficients will involve direct and indirect effects). Thus, a dynamic panel data model was estimated. The problem of small sample validation for the simple estimation procedures of panel data models may arise as the number of years available is relatively small (T = 12). To solve this problem the GMM approach of Arellano and Bond (1991) was applied (...)".

Dynamic models offer, under a set of regularity conditions, asymptotically normal and consistent estimates of the parameters. The interpretation of the estimated coefficients as elasticities is possible due the double-logarithmic form of the model (Rodríguez and Rivadulla, 2012). Thus, the model considered is

$$y_{it} = \gamma_p y_{i,\,t-1} + \ldots + \gamma_p y_{i,\,t-p} + x'_{it}\beta + \alpha_i + \varepsilon_{it},\ t=p+1,\ldots,T \qquad (4.2)$$

where α_i, i=1,....N are individual specific fixed effect. The regressors x_{it} are assumed to be uncorrelated with ε_{it}. The objective is to consistently estimate $\gamma_1, \ldots \gamma_p$ and β when α_i is a fixed effect. However, under this assumption the estimators are also consistent if a random effect model is considered.

Paper 1 summarizes the literature review that focused on studies which attempted to estimate international tourism demand elasticities by using dynamic panel data models. Extending the work of Song and Li (2008) we partially updated the literature review, finding several studies that modelled tourism demand using dynamic panel data models. According to Song and Li (2008) this method has rarely been applied to tourism demand analysis (Table 1.3).

Table 1.3 - Tourism demand studies using dynamic panel data models (2000-2012)

Study[2]	Frequency and Sample	Region of Focus	Dependent variable	PDR Type
Garín-Muñoz and Amaral (2000)	A: 85-95	Spain (I)	TN/P	Static/Dynamic PD
Ledesma-Rodríguez et al. (2001)	A: 79-97	Tenerife (I)	TA	Static/Dynamic PD
Eugenio-Martín (2004)	A: 85-98	21 Latin American Countries (I)	TA	Static/Dynamic PD
Maloney and Rojas (2005)	A: 90-02	Caribbean Islands (I)	TA/P	Static/Dynamic PD
Naudé and Saayman (2005)	A: 96-02	43 African countries	TA	Static/Dynamic PD CSR
Garín-Muñoz (2006)	A: 92-02	Canary Islands (I)	TA	Static/Dynamic PD
Roget and González (2006)	A: 96-01	Spain (I)	TN-Rural	Dynamic PD
Guarín-Muñoz and Montero-Martín (2007)	A: 91-03	Baliaric Islands (I)	TA	Dynamic PD
Khadaroo and Seetanah (2007a)	A:92-01	26 Islands Economies	T	Static/Dynamic PD
Khadaroo and Seetanah (2007b)	A:78-03	Mauritius (I)	TA	Dynamic PD
Cortés-Jiménez (2008)	A:90-04	Spain and Italy (I)	TA/TN	Dynamic PD
Eugenio-Martin et al. (2008)	A:95-02	Australia/France/Germany/Japan/Spain/UK/USA (I/O)	TA	Static/Dynamic PD
Fayissa at el. (2008)	A:95-04	42 African countries	GDP	Static/Dynamic PD
Ige and Odularu (2008)	A:00-04	West Africa	GDP	Static/Dynamic PD
Khadaroo and Seetanah (2008)	A:90-00	28 countries	T	Dynamic PD
Kuo et al. (2008)	M: 2002:10-2006:9	China/Hong Kong/Singapore/Taiwan (I)	TA	Dynamic PD
Lee and Chang (2008)	A:90-02	55 OCDE Countries	GDP	Dynamic PD
Proença and Soukiazos (2008)	A:90-04	Greece/Italy/Portugal/Spain	INC	Dynamic PD
Sequeira and Nunes (2008)	P6A: 80-84, 85-89, 90-94, 95-99, 00-02	Sample of Smaller Countries and Poor Countries of the World (I)	GDP	Dynamic PD
Soukiazis and Proença (2008)	A: 93-01	Portuguese Regions (I)	Y/P	Static/Dynamic PD
Aslan et al. (2009)	A: 95-04	Turkey (I)	VD	Dynamic PD
Brida and Risso (2009)	A: 87-07	Germany (O)	OVER	Dynamic PD
Falk (2009)	A: 85/86-05/06	Austria (I)	OVER	Dynamic PD
Gawande et al. (2009)	A:91-00	Caribbean countries (I)	TA	Dynamic PD
Guarín-Muñoz (2009)	A:99-06	Spain – Galicia (I)	VN (Domestic and International)	Static/Dynamic PD
Habibi et al. (2009)	A:95-05	Malaysia (I)	TA	Dynamic PD
Kuo et al. (2009)	M:2003:9-2007:5	43 countries (I)	TD	Static/Dynamic PD
Seetaram and Dwyer (2009)	A:92:06	Australia (I)	DP	Dynamic PD
Taylor and Ortiz (2009)	M:1998:1 – 2004:9	UK (I - Domestic tourism)	TD	Static/Dynamic PD
Falk (2010)	A:87/87-05/06	28 Austrian Ski resorts	OVER	Dynamic PD
Görmüs and Göçer (2010)	A:00-06	Turkey (I)	TA	Static/Dynamic PD
Leitão (2010)	A: 95-06	Portugal (I)	TOUR	Static/Dynamic PD
Narayan, Narayan, Prasad and Prasad (2010)	A:88-04	Pacific Islands countries (I)	GDP	Dynamic PD
Ouerfelli (2010)				
Seetanah, Durbarry and Ragodoo (2010)	A:85-00	South Africa (I)	TA	Dynamic PD

[2] Authors referred from 2000 to 2009 are cited in Song and Li (2008) and Ramos and Rodrigues (2013).

Seeteram (2010)	A: 91-07	Australia (I)	TA	Dynamic PD
Ibrahim (2011)	A:90-08	Egypt	TA	Dynamic PD
Brida, Punzo, and Risso (2011)	A: 90-05	Brazil	GDP	Dynamic PD
Croes (2011)	A:99-05	Caribbean countries	W	Dynamic PD
Deng and Athanasopoulos (2011)	Q: 98Q1 – 08Q4	Australia (I)	VN	Dynamic PD/ Spatial Panel Model
Di Lascio, Giannerini, Scourcu and Candela (2011)	A: 03-07	Italy (I)	HA	Static/Dynamic PD
Fayissa, Nsiah, and Tadesse (2011)	A:90-05	18 Latin American Countries	GDP	Static and Dynamic PD
Holzner (2011)	A:70-07	134 countries	GDP	Dynamic PD
Keum (2011)	A:95-06	South Korea (I,O)	TV/TD	Dynamic/ CSR /Polled PD
Leitão (2011)	A:95-08	Portugal (I)	GDP	Static/Dynamic PD
Rey, Myro and Galera. (2011)	A:00-09	EU-15 countries	TUR	Dynamic PD
Santana-Galleno, Lendesma-Rodríguez, Pérez-Rodríguez (2011)	A: 80-06	OCDE Countries (I)	TA/D	Static/Dynamic PD
Santana-Jiménez and Hernández (2011)	A:90-05	Canary Islands (I)	TUR	Dynamic PD
Seetanah (2011)	A: 90-07	19 Islands economies	EG	Dynamic PD
Surugiu, Leitão, and Surugiu (2011)	A: 97-08	Romania (I)	TOU	Static/Dynamic PD
Töglhofer, Eigner, and Prettenthaler (2011)	A: 72/73-06/07	Austria (I)	OVER	Static/ Dynamic/ Polled PD
Dritsakis (2012)	A:80-07	Spain/France/Italy/Greece/Turkey/Cyprus and Tunisia (I)	GDP	Dynamic PD
Massidda and Etzo (2012)	A_98-07	Italy (I - Domestic)	ARR	Dynamic PD
Rodríguez, Martínez-Roget, and Pawlowska (2012)	A:01-09	Spain (I)	STU	Dynamic PD
Rodríguez and Rivadulla (2012)	A:01-09	Spain (I)	OVER	Dynamic PD
Seetaram (2012)	A:80-08	Australia (I)	TA	Dynamic PD
Yang (2012)	A:00-09	China	REV	Dynamic PD

Legend - A: Annual | M: Monthly | Q: Quaternaly | AR: Aeronautical Charges | NAR: Non-aeronautical revenue| I: Inbound | O: Outbound | DP: Demand for travel INC: Income |PD: Panel data | CSR: Cross-sectional Regression | E: Economy sectors without Tourism | TP : Travel Propensity | OVER: Overnight stays |TD/C: Tourist departures/Country | TD: Tourist departures | TA/C: Tourist arrivals/country | TA/D: Tourist arrivals/departures | F: Fuel | W: Tourism spending| EG: Economic growth |TN/R: Tourism nights in rural tourism accommodation | GDP: Gross Domestic Product | Y/P: income per capita | Y/I: income | VD: Tourism expenditure| PCTI: Per capita taxable income| PHG: Price of Hunting Game | TOUR: Overnight stays from tourist arrivals| TOU: foreign tourist arrivals | SOTF: stay-over tourist flow | CTF: Cruise tourist flow | VN: Visitor nights | HA: Hotel arrivals | SP: Spending per person | TV/TD: International travel flows/International trade flows | VA: Visitors Arrivals | T: Transport |TD: Tourist Demand | EXP: Tourism Expenditure | TUR: Tourists | REV: Tourism enterprises revenue | STU: Foreign Students – ERASMUS | Whale-Watching Tourism Demand | ARR: Tourists flows.

Source: Based on Song and Li (2008) and Ramos and Rodrigues (2013).

1.6.2.3 Primary data collected from a survey: Questionnaire – Structure, Sample, Data Collection, Data analysis.

Questionnaire Structure

The survey was developed by a team of researchers from the University of Algarve. The aim was to evaluate routes operating in Faro airport. The questionnaire contains 45 questions arranged in six groups according to the type of information that each group is intended to collect. The survey was designed in two versions, Portuguese and English.

The six parts of the survey are:

1. **Part A – Trip Logistics** – which is composed by eleven questions allowing to identify passengers final destination, type of accommodation, transports used between the airport and the final destination; travel companions and place of residence.
2. **Part B – Travel Expenses** - this information assisted the estimator of the tourist's economic activity, specifically asking about the cost of the package; the cost of each component of the trip and the total amount spent daily.
3. **Part C – Travel Experience –** this part contains questions that identify first and repeat visitors.
4. **Part D – Buying/Consumption Procedures** – contains nine questions allowing to identify buying behaviour aspects, namely, advance purchase; planning of trip; identifying and assessing sources of information; type of reservation; motives for the choice of the travel period and the spending amount intention with the trip.
5. **Part E – Motivations and Satisfaction –** this part of the questionnaire tackles the expectation towards the final destination; assesses the importance and satisfaction of several attributes of the destination, as well as, future revisiting intentions and recommendations.
6. **Part F – Socio-demographic Characteristics -** contains nine questions, identifying the socio-demographic profile, namely age; gender; nationality; social status; family average monthly income; employment and education.

For the development of the present thesis the parts of the survey that were considered and mentioned in the data analysis of each paper were those presented in the following Table 1.4:

Table 1.4 - Questions extracted from the original questionnaire to this research

QUESTIONNAIRE PART	QUESTIONS	PAPER
Part A. Trip Logistics	8. In total, how many nights were/will you be away from home on this trip?	Papers 2, 3, 4 and 5
	10. Whom are/were you travelling with?	Papers 2, 3 and 4
Part B. Travelling Expenses	17. Beyond what was paid for the trip, how much pocket money did you spend daily?	Papers 4 and 5
Part C. Travel Experience	20. Have you ever visited your final destination before?	Papers 2,3 and 4
Part E. Motivations and Satisfaction	28. Whan deciding your trvel itinerary, how important were the following aspects?	Papers 2,3,4 and 5
	30. Which is the degree of the overall satisfaction with the destination?	Papers 2,3 and 4
	33. Do you intend to return to your final destination?	Papers 2,3 and 4
	34.Would you recommend to friends and relatives?	Papers 2,3 and 4
Part F. Socio-demographic characteristics	36. Age	Papers 2,3 and 4
	37. Gender	Papers 2,3 and 4
	38. Nationality	Papers 2,3,4 and 5
	39. Marrital status	Papers 2,3 and 4
	41. Education	Papers 2,3 and 4
	42. Family average monthly income	Papers 2,3 and 4
	43. Unemployment situation	Papers 2,3 and 4

Source: Correia and Pimpão (2012).

The variables at tables 1.4 were selected to support this research, considering the procedures adopted and the spline categories, some variables were recoded, as it is illustrated in table 1.5.

Table 1.5 - Recoded scales of questions extracted from the original questionnaire

QUESTIONS	Scale/options	Recoded scale
10. Whom are/were you travelling with?	Spouse Family Friends Alone Excursion group Other	Alone Spouse/family Friends/excursion groups /others
33. Do you intend to return to your final destination?	No I don't know Probably For sure	No Yes
34.Would you recommend to friends and relatives?	No I don't know Probably For sure	No Yes
36. Age	Open answer	Less than 30 years old Between 31 and 50 years old 51 years old and above
38. Nationality	Open answer	United Kigdom Germany The Netherlands Ireland Scandinavia Others
39. Social status	Single Married/Living together Divorced Widowed	Single Married/Living together Divorced/Widowed
41. Education	Elementary Secondary University/College Pos/graduate Other	Elementary Secondary University
42. Family average monthly income	Less than 2000€ 2001€-3500€ 3501€-5000€ 5001€-8000€ 8001€ and above	Less than 3500€ 3500€-5000€ 5001€ and above

Source: Adapted by Correia and Pimpão (2012).

Data Validation

In order to ensure the quality of the results several online and desk procedures were adopted which determined the validation of the received surveys.

Invalidation criteria were adopted to surveys without:

1. indication of place of residence and final destination ;
2. indication of average length of stay, accommodation and travel companion were invalidated due to further calculation of economic impacts;
3. indication of the total expense;
4. questionnaire with more than 10% of non-responses.

Validation criteria:

1. Given the ambiguity of some concepts and because the survey was carried out in the departure lounge but reported to the entrance, questions that allow the measuring of the journey from the beginning until the return were introduced. This strategy allowed to realize and validate all the routes, even in those cases where exchanges were observed (2% of all observations).
2. In order to validate the type of passenger question number 3 was introduced for further confirmation of the starting point of the travel flows.
3. The purpose of the holidays is another issue that may not be so evident for the passenger, due the multiplicity of functions that he/she can achieve on a trip. Open questions (Which?), the insertion of family and friends house in the types of accommodation and question 9.1 pointed a clearly differentiated set of motivations, including business and visiting family and friends, allowing the detection of overlaps or ambiguous motivations.
4. It is usual to find some confusion between private rented houses with those belonging to family and friends, thus the validation criteria adopted involves the confirmation whether this accommodation generated expenditures.
5. For the average stay calculation, passengers with stays longer than 30 nights were excluded, in order to not distort the economic impact of the routes.

These procedures were adopted even if during the project design a pre-test and a number of questions were rewritten to ensure a clear and objective interpretation.

Sample

Concerning the primary source data, the sample was calculate annually, based on the secondary data provided by ANA, concerning the number of international passengers that arrived at Faro Airport, given the degree of confidence (1-α) and the level of precision (D):

$$n=\frac{(Z_{\alpha/2})^2 S^2}{D^2} \quad (5)$$

where:

n – is the sample size

$Z_{\alpha/2}$- critical value of the normal distribution

S – Standard deviation

D – accuracy level

This formulation assumes an approximation to a normal distribution with a correction factor for finite samples. Thus, for a 95% confidence level, the calculation of the sample allows us to guarantee that the 15542 surveys ensure generalisability of results to the population, with an error of 0.8 %. Globally 15542 surveys were selected for further research. In Table 1.6, the temporal distribution of the sample is presented, as well as the estimated error margins (*see: papers 2, 3 and 4*).

Table 1.6 - Sample by year

Year	Sample	Error margin
2007	2636	1.9%
2008	2187	2.1%
2009	5938	1.3%
2010	4781	1.4%
TOTAL	**15542**	**0.8%**

Source: Correia and Pimpão (2012).

Table 1.7 presents the respondents' characteristics over the years 2007-2010. From the first descriptive attempt concerning data analyses of the demographic profile over the years, it was observed that according to the mean values, middle age individuals (30-51 years old) predominate considerably; identified as married or living together in terms of marital status. Results revealed that in terms of educational level, and employment

status over the years considered, a secondary degree and at least employed is the predominant individual social status with a family monthly average income between 3501€ - 5000€.

Table 1.7 - Respondent characteristics (n = 15542)

	%		%
Age		***Family income (monthly average)***	
up to 30	31.2	up to 2000 €	15.7
31-50	48.8	2001€ - 3500€	22.4
51 and over	20.0	3501€ - 5000€	40.8
Gender		5001€ - 8000€	10.9
Male	46.3	8001€ and over	10.2
Female	53.7	***Work Situation***	
Marital status		Employed	62.3
Married	67.3	Unemployed	22.0
Single	29.9	Not active	9.3
Divorced/Widowed	2.8	Student	5.0
Education		Retired	1.4
Elementary	22.5	***Travel companion***	
Secondary	75.9	Alone	9.6
Universitary	1.6	Spouse/Family	73.0
		Friends/Group	16.8
		Other	0.6

Source: Own elaboration.

Accuracy of categorical variables of the sample

In the present thesis we are dealing with categorical variables, i.e. attributes of destinations (*cf.* Table 1.4, question 28) that were assessed by the tourists through a 5-points Likert scale.

In order to test for significant differences by year a Scheffé test was conducted. Accordingly to Martin and Witt (1989:13) citing Neter, Wasserman and Kutner (1985),

> "If there are more than two levels of a significant factor, it is necessary to perform a further analysis in order to determine which of the factor levels are statistically different from each other. This may be achieved using Scheffe's multiple comparison test, which is capable of handling unequal cell sizes."

Results of the Scheffé test are in appendix 1 table 1.4, allowed us to identify the motivations with more variability over the years, which are cleanliness, cultural and historical resources, available information, closeness to home, accommodation,

gastronomy, price, hospitality, sightseeing and excursions and golf facilities (*see: papers 2, 3, 4 and 5*).

Further from this set of attributes and based on Table 1.8, the descriptive data analyses of the tourist's motivations/preferences over the years, based on the mean values, it was moved that the preferences with highest importance were, cleanliness, accommodation, price and hospitality with an average classification of approximately 4 in a Likert scale from one to five[3], which means that those attributes were considered as very important.

Table 1.8 – Rank of tourists' preferences

Motivations / Preferences	*N Valid*	*Missing*	*Mean*	*Std. Deviation*	*Minimum*	*Maximum*	*Sum*
Cleanliness	15542	0	3,70	1,250	1	5	57452
Cultural and historical resources	15542	0	3,10	1,208	1	5	48224
Information available	15542	0	2,80	1,176	1	5	43572
Closeness to home	15542	0	2,62	1,284	1	5	40710
Accommodation	15542	0	3,73	1,225	1	5	57911
Gastronomy	15542	0	3,28	1,240	1	5	51004
Price	15542	0	3,74	1,157	1	5	58070
Hospitality	15542	0	3,62	1,183	1	5	56290
Sightseeing and excursions	15542	0	2,89	1,216	1	5	44927
Golf facilities	15542	0	1,90	1,196	1	5	29517

Source: Adapted from Correia and Pimpão (2012).

These ten motivations were used to estimate an ordered probit, and to test the established previous hypothesis for the main purposes of the research.

Ordered Probit

In the literature on tourism, mainly in the context of tourism demand research, there is a rather small body of research that employs probit models. These models may outperform the simple models in terms of explanatory ability (depending on the context of analysis), though not necessarily in terms of forecast accuracy (Calantone, Benedetto and Bojanic, 1988).

[3] Scale: 1 – not important; 2 – somewhat important; 3 – moderately important; 4 – quite important; 5 – extremely important.

Song and Li (2008); Lim (1997) and Crouch (1995) highlighted that for the majority of studies in the field of tourism demand that used quantitative methods, nevertheless time-series and econometric models are the most commonly used. Focusing on tourism studies that used probit models, it is possible to find several applied studies (Table 1.9).

Table 1.9 - Tourism studies using probit models

Study	Sample / Local	Dependent Variables	Probit model type	Estimator method
Moniz (2012)	300 questionnaires were questionnaires were undertaken by direct interview of the tourists departing from São Miguel, Terceira and Faial airports, in the Azores (april 2008-september-2009)	Return choice	Dynamic probit model	Log-likelihood
Altinay, Madanoglu, Daniele, and Lashley (2012)	279 questionnaires were collected from students pursuing tourism and hospitality management degree at a British University.	Entrepreneurial Intention	Binary probit model	Maximum likelihood
Martínez-Ros and Orfila-Sintes (2012)	1586 hotel establishments in the Balearic islands	Innovation decision (binary); Innovation Intensity (categorical)	Binary probit model + Discrete Choice model	Maximum likelihood
Kulendran and Wong (2011)	Quarterly tourist arrivals time series to Hong Kong for the period from the March quarter 1975 to December quarter 2008 were obtained from visitor arrivals statistics published by the Hong Kong Tourism Board.	Growth Rate - Is represented by the expansion and contraction periods in tourism demand growth cycle	Logit and probit Binary models	Maximum likelihood
Becken and Schiff (2011)	The data on tourist behaviour stems from the New Zealand International Visitor Survey (IVS). All tourists from the top six countries of origin, between 1997 and 2007. In total, these top six origins comprise 71% of all international tourists to New Zealand (38030).	Total distance travelled by each Mode (Car and air transport) divided by the number of nights spent in New Zealand	Binary probit model	Maximum likelihood
Lee and Jang (2010)	61 firms (38 hotels and 23 gambling firms) extracted from COMPUTSTAT database. Quarterly operating cash flow from the 1st quarter of 2000 through the 4th quarter of 2008 – total of 1783 firm-quarter observations	International status ; Domestic status	Binary probit model	Maximum likelihood
Kim and Jang (2010)	All USA lodging firms (SIC code 7011) that appeared at least	Divident payment;	Binary probit model	Maximum likelihood

	once on the Compustat annual database during the period from 1997-2006. Total of 248 observations.	Divident amount		
Tapsuwan, Burton and Perriam (2010)	161 questionnaires applied to the visitors of Yanchep National Park in Australia	Cave Revisited; Park Revisited	Bivariate and multivariate probit model	Simulated maximum likelihood (SML)
Hasegawa (2010)	3679 unit records extracted from the survey data from the Annual Report on the Survey of Tourists Satisfaction 2002 conducted in Hokkaido Island (Japan).	Tourists Satisfaction	Ordered probit model	Maximum likelihood
Lucas (2009)	Two samples. First (Hospitality Industry – HI) comprises 121 workplaces and 975 of their employees. Second sample (Private Service Sector-PSS) comprises 1097 workplaces and 12.308 of their employees.	Employees trade union membership; three individual indicators of a preference for self-representation	Multivariate probit model	Maximum likelihood
Yoon, Thompson and Parsa (2009)	Survey conducted at a large public university in the Northeastern United States. Data collected from users of Quick Service Restaurant (QSR) between the ages of 19 and 25.	Cognition; confidence, satisfaction and intention to eat	Multivariate probit model	Maximum likelihood
Orfila-Sintes and Mattson (2009)	Cross-sectional survey data from a stratified sample of hotels (N=331) in Balearic Islands.	Occupancy (degree of innovation)	Binary probit model	Maximum likelihood
Tchetchik, Fleisher and Shoval (2009)	The database used for this study originated from a survey of a sample of visitors to the Old City of Acre (Israel). 88 observations.	Tourist attractions (Z= Templars' Tunnel; E= Bazaar; B= Commercial area)	Multivariate probit model	Maximum likelihood
Menezes, Vieira e Carvalho (2009)	890 tourists who visited the Azores in 2007.	Overall satisfaction	Ordered probit model	Maximum likelihood
Oliveira and Pereira (2008)	1098 questionnaires applied at the Airport – Funchal – Madeira Island	Destination attributes	Ordered probit model	Maximum likelihood
Singh and Upneja (2008)	47 lodging firms with 235 firm-year observations during the 5-year sample period in USA.	User of derivatives for hedging	Binary probit model	Maximum likelihood
Alleyne, Doherty and Greenidge (2006)	Quantitative survey covering 46 hotels in Barbados.	Human resources outcomes; Performance outcomes	Ordered probit model	Maximum likelihood
Aradhyula and Tronstad (2003)	78 questionnaires applied to agribusiness firms in Arizona – USA.	Propensity to Trade; Visited as a Tourist	Ordered probit model	Maximum likelihood
Reece (2001)	Two samples. First sample of 32,009 households (Las Vegas) and second sample with 31,783 households (Atlantic–Cape	Household traveler to Las Vegas; Household	Binary probit model	Maximum likelihood

	May).	traveler to Atlantic		
Butterfield, Deal and Kubursi (1998)	Data relating to Ontario government tourism advertising (1987-1988)	Tourist spending	SEM and Logit and Probit models	Maximum likelihood (probit) Maximum Quasi-Likelihood (logit)
Hoffman and Low (1981)	132 responses taken from a 1978-1979 survey conducted by the Valley of the Sun Convention Bureau in Phoenix, Arizona (USA)	Return on Vacation	Binary probit model	Maximum likelihood
Mak and Moncour (1980)	The model of Tourism demand for Travel Agent was tested using survey data on 4233US mainland visitor parties to Hawaii Visitors Bureau in 1974.	Travel Agent	Binary probit model	Maximum likelihood

Source: Own elaboration.

The use of probit estimation techniques allows for several insights that other methods of data analysis could not offer, particularly when the variables are qualitative in nature (Hoffman and Low, 1981). As the authors stated, "this approach allows the identification of significant factors, to measure the relative importance of a number of factors and to estimate the probability of certain behaviour" (1981: 38). Focusing on studies that applied ordered probit models, it is evident that there is a rather small body of research that employs these models in order to study tourist behaviour. One of the most recent works developed in Portugal, that adopts a probit model was proposed by Moniz (2012), who uses a dynamic probit model analysing the reasons behind repeat visits to the Azores Islands. Other study that adopted ordered probit analysis was the work by Hasegawa (2010), who to analyse tourist satisfaction. The author extracted 3679 unit records from the survey data of Annual Report on the Survey of Tourists Satisfaction 2002 conducted in Hokkaido Island (Japan). The data of several ordinal choices was analysed through the estimation of a Bayesian multivariate ordered probit model describing the satisfaction of tourists visiting Hokkaido in Japan. Results showed that satisfaction derived from the scenery and meals has the largest influence on the overall satisfaction. Another study conducted in Portugal that employs an ordered probit model was developed by Menezes, Vieira and Carvalho, (2009). The authors developed a new micro-survey on a representative sample of tourists who visited the Azores Islands in order to quantify the determinants of tourist satisfaction, the intention to revisit the destination and the likelihood of recommending the destination to friends and

relatives. Through the adoption of an ordered probit model, the results provided different levels of satisfaction with the visit to Azores, by nationalities. Results also evidenced that for Sweden and Dutch tourists the probability of revisiting the Azores decreases.

Oliveira and Pereira (2008) employed an ordered probit model to examine how tourists' sociodemographic characteristics, influence their evaluation of different aspects of the destination at the time of making their decision to visit. Using an ordered probit estimation, their results showed that different tourists characteristics influenced the importance they attribute to various aspects of the destination. Alleyne, Doherty and Greenidge (2006) conducted a research to measure the effect of human resource management on performance in the hotel industry in Barbados. Using a quantitative survey covering 46 hotels out of a population of 75 hotels, an ordered probit analysis was conducted to test internal and external fit hypothesis. The conclusions evidenced a good level of investment in human resource management in Barbados and *managers assert that their hotels are performing well in terms of both human resources and performance outcomes.* A study developed by Aradhyula and Tronstad (2003), analysed the way that cross-border tourism travel impact a firm's propensity to trade. An ordered probit model was used to quantify their hypothesized relationships. To quantify the impact of tourist and venture visits and firm attributes on cross-border trade, the authors analysed survey data extracted from Arizona agribusiness firms regarding their business activities in Sonora. Results revealed a strong support for the notion that Arizona agribusiness proprietors will be more likely to trade with their cross-border state of Sonora (Mexico), if the individuals have made a visit to that region. In terms of tourist visits results showed an increase probability of trading for the firm.

With the main purpose of analysing how tourists' motivations moderate over time the choice of the Algarve as a tourism destination (*see: paper 3*), an ordered probit model is developed. Thus, modelling ordinal outcomes has particular aspects that were highlighted by Long and Freese (2006). "An ordinal regression model is commonly presented as a latent-variable model" (Long and Freese, 2006: 184). Defining y^* as a latent variable ranging from $-\infty$ to ∞, the structural mode is:

$y_i^* = x'_i\beta + \varepsilon_i,\ i=1,...,N$ (6)

where ε_i is a random error, and x_i is the vector of explanatory (exogenous) variables.

As stated in *paper 3*, possible responses were 1= not important (NI), 2 = somewhat important (I), 3= moderately important (MI), 4= quite important (QI) and 5 = extremely important (EI). The continuous latent variable can be thought of as the possible answer that an individual may give over time *t* (*see: paper 2*). The observed response categories are tied to the variable by the measurement model:

$$y_i = \begin{cases} 1 \Rightarrow \text{NI} & \text{if } \tau_0 = -\infty \le y_i^* < \tau_1 \\ 2 \Rightarrow \text{I} & \text{if } \tau_1 \le y_i^* < \tau_2 \\ 3 \Rightarrow \text{MI} & \text{if } \tau_2 \le y_i^* < \tau_3 \\ 4 \Rightarrow \text{QI} & \text{if } \tau_3 \le y_i^* < \tau_4 \\ 5 \Rightarrow \text{EI} & \text{if } \tau_4 \le y_i^* < \tau_5 = \infty \end{cases} \quad (6.1)$$

where $\tau_1, \tau_2, \tau_3, \tau_4$ *and* τ_5 are the cut-off points and $\tau_1 < \tau_2 < \tau_3 < \tau_4 < \tau_5$.

The probability of an observed outcome for a given value of observing $y = p$ for given values of the y_i corresponds to the region of the distribution where y^* falls between τ_{j-1} and τ_j:

$$\Pr(y_i = j \mid x) = \Pr\left(\tau_{j-1} \le y_i^* < \tau_j \middle| x\right) \quad (6.2)$$

Hence, as an example, the conditional probability is,

$$\begin{aligned} \Pr(y_i = j) &= Pr\left(K_{j-1} < y_i^* \le K_j\right) \\ &= Pr\left(K_{j-1} < x_i'\beta + \varepsilon_i \le K_j\right) \\ &= \Pr\left(K_{j-1} < x_i'\beta < \varepsilon_i \le K_j - x_i'\beta\right) \\ &= F\left(K_j - x_i'\beta\right) - F\left(K_{j-1)} - x_i'\beta\right) \end{aligned} \quad (6.3)$$

where *F* is the cumulative distribution function of ε_i. For the ordered probit model, ε, is standard normal distributed ($N(0,1)$) and *F* is the standard normal cumulative distribution function (Long and Freese, 2006). The sign of the regression parameters β can be immediately interpreted as determining whether or not the latent variable y^*

increases with the regressor (Cameron and Trivedi, 2005). As can be observed in *paper 3*, y_{it}^{*} represents the latent variables of preference for attribute *i* at time *t*, declared by the tourist.

Multiple regression analysis

Plenty of published studies on causal tourism demand models before the 1990s were based on classical regressions with ordinal least squares (*hereafter* OLS) as the main estimation procedure (Song *et al.*, 2009; Song and Li, 2008; Lim, 1999 and Crouch 1995). The functional form of most models was, a single-equation, and either linear or power models. In order to estimate the model in (3.1) a linear regression analysis was adopted to test the role of specific regressors. In accordance with Cameron and Trivedi (2010), in the analysis of a linear regression model, it is necessary that ε_i satisfies the classical conditions, as well as the exogeneity of regressors. However, in the course of model estimation, heteroskedastic uncorrelated errors were detected through the results of White's and Breusch-Pagan / Cook-Weisberg tests for heteroskedasticity in each model (see: *paper 4*).

Cameron and Trivedi (2010) explain that the properties of any estimator vary with the assumptions made about the data-generating process (*hereafter* DGP). For the linear regression model, this reduces to assumption about the regression error ε. According to the authors, "the starting point for analysis is to assume that ε satisfies the following classical conditions:

1. $E(\varepsilon_i|\mathbf{x}_i) = 0$ (exogeneity of regressors)
2. $E(\varepsilon_i^2|\mathbf{x}_i) = \sigma^2$ (conditional homoskedasticity)
3. $E(\varepsilon_i\varepsilon_j|\mathbf{x}_i, \mathbf{x}_j) = 0, i \neq j$, (conditionally uncorrelated observations)

Assumption 1 is essential for the consistent estimation of β and implies that the conditional mean is correctly specified.

Assumption 2 and 3 determine the form of the variance-covariance matrix of the estimator (*hereafter* VCE) of $\widehat{\beta}$.

Under assumptions 1-3, the OLS estimator is fully efficient. If, additionally, ε_i is normally distributed, then the *"t statistics"* are exactly *t* distributed" (Cameron and Trivedi, 2010: 83).

If heteroskedastic uncorrelated errors are observed then an heteroskedasticity-robust estimator, of the VCE of the OLS estimators is required; see Cameron and Trivedi (2010).

Concerning the tourism demand models estimated in *paper 4* a robust estimator of the standard errors was adopted (see: *paper 4*). This is justified since Assumption 2 was not confirmed. *Papers 1, 3 and 4* follows the underlined econometric procedures which allow to develop this research. A summary of the papers structure is outlined in section 1.7.

1.7 Overview of the papers

This section displays a brief summary of the five papers that structure the research in order for the objectives to be accomplished. The first paper allows the justification of the contextual setting of the thesis, through a characterisation of the international tourism demand among the different regions in Portugal. The paper used panel data in order to explain tourism demand patterns by macroeconomic variables that act as proxies of socio-demographic profile of the most steady markets in Portugal, such as, United Kingdom, Germany, Ireland, Spain, France, Netherlands, which represents 66% of total international overnight stays in Portugal (Turismo de Portugal, 2012). By performing a model for each region it was possible to depict the region where international tourism demand vary the most and at the same time evidence a strong loyalty. Based on the comparative analysis of international tourism demand in each region it was possible to set the geographic scope to develop further this research – the Algarve.

The second and third papers were structured to provide understanding of how preferences are formed and how preferences moderate overnights, as these analyses were performed by year, preferences heterogeneity were derived, suggesting the dynamics that rooted the beginning of this research.

Further *paper 4* establish how preferences moderate the spending patterns of tourism demand, giving rise to the heterogeneity that marks the quest from which this research started - preferences are dynamic (Pearce and Caltabiano, 1983). Finally *paper 5* adopts yield analysis to depict how tourists' preferences may potentiate tourism development in economic (spending patterns) and flows (length of stay) terms.

In summary, the thesis is composed by five papers: the first is the contextual setting justification; the following four presented several theoretical contributions and empirical results, as well as insights into the strategic implication for destination.

The driven question in the present thesis is to assess tourists' preferences dynamics and how these preferences potentiate international tourism demand. Each of five studies that assemble this thesis plays a specific role in achieving the research objectives, an extended summary of the five papers clarify how these papers contribute to develop this research at theoretical, empirical and strategical level.

1.7.1 Summary of Paper 1 - "A comparative analysis of tourism destination demand in Portugal".

This first paper estimated a dynamic panel data model with the objective of explaining the evolution of international overnight stays in each region of Portugal. Under the tenets of a macroeconom(etr)ic perspective (Garín-Muñoz and Amaral, 2000; Garín-Muñoz, 2006; Santana-Galleno, Ledesma-Rodríguez and Pérez-Rodríguez, 2011; Sakai, Brown and Mak, 2000 and Seetanah, 2011) that considers that tourism demand patterns are explained by economic and social conditions. The literature review enlightened studies which have attempted to generate international tourism demand elasticities by using dynamic panel data models. Following the work of Song and Li (2008) and Ramos and Rodrigues (2013) an update literature was provided from 2000 to 2012. Further econometric methods mostly used to performed dynamic models were reviewed, in and out of tourism literature. Since these models have had less application in tourism demand analysis (Brida and Risso, 2009). This study aims to identify and analyse the determinants of international tourism demand for each tourism region of Portugal. Following the literature review based on demand studies that applied panel data models it was considered the following hypothesis:
H1: Socio-demographic characteristics of international tourists moderate the decision to travel to each region of Portugal.

Further it was assumed that macroeconomic variables may act as proxies of sociodemographic characteristics of tourists, such as per capita income (per capita GDP), relative proves, unemployment rate and final household consumption. Dynamic panel data models were performed for the seven touristic regions of Portugal (Alentejo, Algarve, Azores, Centre, Lisbon, North and Madeira) from 2000-2011 and for the main international markets in Portugal, Irish, British, Dutch, German, French and Spanish, which represented 66% of total overnight in Portugal (Turismo de Portugal, IP, 2012).

Findings reveal that demand for international tourism is elastic concerning available income; however this result presents different patterns from region to region. As reposted on the lagged dependent variable results evidence that the Algarve absorbs the highest repeat visit patterns.

This study is exploratory on its essence; its main contribution lies on the justification of geographical scope of the research, and indeed identifies the main macroeconomic determinants of international tourism demand and estimated elasticities. Moreover identifies the Algarve as the region that evidence the most persistent international tourism demand patterns.

1.7.2 Summary of Paper 2 - "Heterogeneity in tourism motivations. The case of the Algarve"

The third paper, aims to determine how non-economic variables correlates with overnight stays of international tourists in the Algarve. The paper assumes tourist motivations as a multidimensional construct able to explained tourists' choices, in a dynamic context (Huang and Hsu, 2009). Furthermore, it is suggested that more than merely identifying tourist motivations it is critical to understand their influence on the evolution of tourism demand. Tourists' socio-demographic characteristics represent additional dimensions important to be considered when analysing tourism demand. According to Heckman (2001), these variables account for heterogeneity in tourism behaviour. Following previous statements Serra, Correia and Rodrigues (*see: paper 2*), justify the objective of this paper: "this study aims to identify the motivations, taking heterogeneity by years into account; and to estimate the extent to which socio-demographic, motivational, and behavioural variables influence overnight stays of international tourists in the Algarve".

The theoretical framework and literature review developed in the paper, informs the construction of the following hypotheses:

H2: Socio-demographic characteristics are age, gender, marital status, level of education, income, employment status and nationality associate with overnight stays.

H3: Travel companion correlates with overnight stays.

H4: Tourists' pull motivations over the years correlates with overnight stays.

H5: Past visit to a destination correlates with overnight stays.

H6: Overall satisfaction with past visits is positively correlated with overnight stays.

H7: Return intention to destination correlates with overnight stays.

H8: Individuals' attitudes in recommending a destination correlates with overnight stays.

Findings reveal that a combination of socio-demographics, motivations and behavioural factors correlate with overnight stays, in different ways along the years and even across the tourists' birth country. Results also show that not all motivations correlated with overnight stays (*see: paper 2*). Hypothesis 6 was rejected instead of it hypotheses 2, 3 and 5 were not rejected. Hypotheses 4, 7 and 8 were partially not rejected.

Theoretical contributions were gathered, namely, concerning the contribution to the scope of behavioural and motivational theories, findings on the return intention variable confirmed that it can be significant when isolated from the issue of satisfaction. Further contribution remains on the evidence that tourists' motivations present heterogeneous patterns over the years and confirm the conclusions that motivations change over time advanced by Pearce and Lee (2005) (*see: paper 2*).

1.7.3 Summary of Paper 3 - "Ranking tourist preferences for Algarve: an ordered probit approach"

This third paper aims to analyse how tourist Algarve preferences over the years are formed. It intends also to determine the extent to established a ranking of preferences based on socio-demographic and behavioural variables. The paper is framed on discrete choice theory (Morley, 1992; Rugg, 1973 and Lancaster, 1966). The present paper fills an important gap in the literature by exploring the preference dynamics of tourism demand, mainly concerning the stable or varying pattern of tourists' preferences over the years. A further contribution of this paper lies in the adoption of non-linear probabilistic methods, such as ordered probit models, to model tourism demand. Serra, Correia and Rodrigues (*see: Paper 3*) justify this study: "given that the present research looks to identify the dynamic behaviour of the preferences of international tourists over time, for which the assumptions of discrete choice theory will be very helpful in order to understand what preferences present the highest utility over time.". This paper tests the following hypotheses (*see paper 3*):

H9: Past behaviour moderates preference *i* at time *t*.

H10: Travel companion plays a role on preference *i* at time *t* of the visit.

H11: Overall satisfaction moderates preference *i* at time *t*.

H12: Previous behavioural intentions moderates preference *i* at time *t*.

H13: Socio demographic variables moderates preference *i* at time *t*.

The hypotheses were tested by the adoption of an ordered probit model. All the hypotheses were not rejected. Findings reveal that there is a difference in the moderate effect of tourist preferences over the years. Results suggest that the preference for Algarve comes from different reasonings and vary over time, although repeat tourists do not reveal any particular preference (*see: paper 3*).

This study present as main contributions, at first concerning the formation of tourist preferences based on cognitive motivations that are embodied by destination attributes. A second contribution derives from the empirical results for the destination. Thus strategies that promote the destination during the whole year should be encouraged. It may be of potential value for tour operators to have a deeper insight of the variables that shape the decisions and actions of this market, such as accommodation, price, hospitality, culture, sightseeing and gastronomy (*see: paper 3*).

1.7.4 Summary of Paper 4 - "Tourist spending dynamics in Algarve. A cross-sectional analysis"

The fourth paper analyses the determinants of international tourist spending in the Algarve, based on socio-demographic, behavioural variables of international tourism demand. Under the tenets of Mok and Iverson (2000:299), statement which follows the idea that nowadays destination managers are trying to "expand their market share by seeking travellers who will spend money, and not just time, on their tourism products", the aims are estimating the determinants of international tourists' expenditures in the Algarve; identify how motivations may lead to quite different expenditure patterns; and assess whether the determinants of tourist spending vary across years.

Since this research has as its geographical scope a sun and sand destination (Algarve), literature review reveals a number of studies that underpinned research with the purpose of analyse the determinants of tourist expenditures in mature destinations (among others, e.g. Kozak, Gokovali, and Bahar, 2008; Sun and Stynes, 2006; Nicolau and Más, 2005; Cheung and Law, 2001; Zhou, 2000 and Cai, 1999) (*see: paper 4*). Following the thoughts of Alegre, Cladera, and Sard, (2011) and Aguilló and Juaneda (2000), that tourism demand, was assessed by expenditures in order to depict tourists profitability.

Accordingly to the literature review it is widely agree (*see: paper 4*) that tourist expenditure reflects the way in which they value the destination, and can be seen as a proxy for perceived utility. Given that destinations do not have utility in themselves, they are endowed with a set of activities / attributes which lend them to a particular utility (Correia *et al.*, 2007b; Nicolau and Más, 2006; Decrop, 2006; Morley, 1992; Rugg, 1973). In other words, tourists have dynamic preferences that is reflected in their expenditures, being those a proxy of the utility the destination comprises, that may vary across the years. Under this assumption the following hypotheses were set:

H14: Past visits (repeat) at the destination positively affects tourists' expenditure.

H15**:** Travel companion positively affects tourists' expenditure.

H16: Overall satisfaction with past visits positively affects tourists' expenditures.

H17: Previous behavioural intentions affects tourists' spending.

H18: Economic and Socio-demographic variables are positively and significantly related to tourist expenditures.

- ***H18a:*** The origin market affects tourists' spending
- ***H18b:*** Age groups affect tourists' spending
- ***H18c:*** The level of household income affects tourists' spending
- ***H18d:*** Gender affects tourists' spending
- ***H18e:*** The level of education affects tourists' spending
- ***H18f:*** Marital status affects tourists' spending

H19**:** Tourist motivations/preferences positively affects tourists' spending.

H20: Length of stay affects tourists' spending.

These hypotheses were tested by the adoption of a multiple regression analysis. Results revealed that a combination of socio-demographic, preferences and travel behavioural variables affect tourists' spending (*see: paper 4*). All the hypotheses were not rejected. Following these results Serra, Correia and Rodrigues (*see: paper 4*) stated that: "findings seem to suggest that the Algarve maintains a dynamic pattern concerning tourists' spending behavior across the years. In the case of tourist preferences, the final regression results identified that not all of them appear to be statistically significant across the years, and also their influence on tourist spending seems to present different patterns across the years".

Theoretical contributions were highlighted. The first one relies on the explanatory power of behavioural and preferences variables, giving rise to the Kahneman and Tversky (1979) theory that posits that consumer behaviour is not entirely rational. Other stream of contribution, rely on implications for policy and managing the destination. In light of this, Serra, Correia and Rodrigues states that (*see: paper 4*): "it is important to underline that those tourists with other motivations that go beyond the demand for traditional beautiful beach and good weather, could play an important role in boosting global tourist expenditure at the destination".

1.7.5 Summary of Paper 5 - "From motivations to yield paths of tourism development. The case of the Algarve"

The final paper, number five, develops new measurements of tourist yield in the context of the Algarve. Since mature destinations, as well as the Algarve, more than just merely seek for increase tourist arrivals, should seek to diversify and retain the most profitable markets. Therefore an understanding of the yield potential of different source markets and segments could underpin destination marketing by both public and private sector organisations (Dwyer and Forsyth, 2008). This assumption leads this paper for answering the question about, how can tourist preferences reveal the yield potential of a certain destination in order to support the assessment of competitiveness of this destination. Thus the following aims were considered in present paper; to suggest a methodological-based proposal to measure visitor yield, using tourists' preferences as a proxy, in order to assess the competitiveness of the destination; to identify turn-over frontier points inside the visitor yield matrix in order to measure dynamic patterns expressed as volatility of visitor yield and length of stay throughout the years; to analyse the high-yield visitors by preference; to contribute to the understanding of how the yield potential of preferences can help to underpin destination marketing strategies.

The visitor yield is then measured for each preference based on the total average length of stay and tourist expenditure per night. This measure is based on the concept of 'visitor yield', which is relevant to the demand rather than the supply side of the industry. This concept of visitor yield relates to the declared preferences by tourists. Finally, a ranking of tourist preferences is presented by visitor yield measurements. Results identify the high yield preferences and low yield preferences related to the

number of overnight stays of international tourism demand in the Algarve, and tourists' expenditures, as well as the volatility of each preference enlightened by the coefficient of variation across the years (*see: paper 5*).

Several contributions from this paper are presented. Concerning strategic implications, destination tourism management authorities should exert considerable influence in order to consolidate the preferences that evidence a high degree of profitability. Moreover tourist preferences are an interesting index in order to match supply to the yield expenditure patterns of tourists and consequently support an assessment of the competitiveness of destinations. Concerning theoretical contribution, this paper contributed for the enrichment of discussion of tourism and visitor yield definition which it is very recent in the literature (among others, e.g., Dwyer, 2008; March, 2008 and Pratt, 2012) (*see: paper 5*).

Following the introductory chapter, chapters two to six of the thesis comprise the contribution of five papers presented in conferences and/or published or submitted to academic journals that will be depicted separately. Chapter seven provides the main conclusions, theoretical and practical contributions, limitations of the study and paths for future research.

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CHAPTER 2

A COMPARATIVE ANALYSIS OF TOURISM DESTINATION DEMAND IN PORTUGAL

(PAPER 1)

A COMPARATIVE ANALYSIS OF TOURISM DESTINATION DEMAND IN PORTUGAL

JAIME SERRA; ANTÓNIA CORREIA & PAULO M.M. RODRIGUES[4]

Abstract

Tourism has experienced different levels of development in the different regions of Portugal. To frame this development, in this paper dynamic panel data models were estimated with the objective of explaining the evolution of international overnight stays in each region. Secondary data from 2000 to 2011 was used. The analysis includes the main tourism source markets for Portugal, such as the United Kingdom, Germany, the Netherlands, Ireland, France and Spain. The tourism literature suggests that, among others, the main determinants of tourism demand are income (GDP), household consumption, unemployment rate and the harmonised consumer price index. Per capita income, unemployment rate and final household consumption were identified as the most shared explanatory variables in each tourism region. However, in some regions, the high elasticity with respect to per capita income was confirmed, suggesting that tourism is a luxury good. It is observed that, although significant, the explanatory power of these variables varies according to the origin and the destination region considered. Findings suggest heterogeneous behaviour of the main international tourism demand by region. Furthermore, results also suggest some implications for public and private tourism authorities. Stakeholders can update the analysis, trends and forecasts of international tourism demand, put forward in the National Strategic Plan for Tourism for the period from 2013 to 2015, by taking into account the different macroeconomic variables that help explain international overnight stays in each region of Portugal.

Keywords: tourism demand; econometric model; dynamic panel data; Portugal

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2.1 Introduction

Tourism is an important social and economic phenomenon that follows a pattern of evolution which is important to understand. Applied economic research attempts to understand this pattern from an applied macroeconom(etr)ic, an applied microeconom(etr)ic, or even a mixed (micro- and macroeconom(etr)ic) perspective. The macroeconom(etr)ic perspective considers that tourism demand patterns are explained by economic and social conditions at an aggregate level (see, *inter alia*, Garín-Muñoz, 2006; Garín-Muñoz and Amaral, 2000; Sakai, Brown and Mak, 2000; Santana-Galleno, Ledesma-Rodríguez and Pérez-Rodríguez, 2011; and Seetanah, 2011), whereas microeconom(etr)ic approaches focus on variables at the individual level (see, *e.g.*, Massidda and Etzo, 2012; Surugiu, Leitão and Surugiu, 2011; and Brida and Risso). A mixed (micro and macroeconom(etr)ic) perspective has recently emerged; see, *inter alia*, Eugenio-Martín, Morales and Scarpa (2004); Eugenio-Martín, Martín-Morales and Sinclair (2008); Garín-Muñoz and Montero-Martin (2007); Leitão (2010); Naudé and Saayman (2005); Yang (2012); and Yang, Lin and Han (2010). However, there has been no clear-cut answer explaining the heterogeneous evolution of tourism demand, which therefore requires further research.

The traditional econometric approach typically used in the literature relies on ordinary least square (OLS) regression analysis. However, over recent years other econometric methods, such as, for instance, autoregressive distributed lag (ADL) models, error correction models (ECM), time varying parameter (TVP) models and almost ideal demand systems (AIDS) have been considered; see Song and Li (2008).

Panel data models have had less application in tourism analysis (Song and Li, 2008). In this paper, using dynamic panel data models we look to identify and analyse the determinants of international tourism demand for each tourism region of Portugal. In order to clarify our assumptions the UNWTO classification of International Tourism was adopted. According to UNWTO (1997), international tourists are defined as those travellers that cross a country's border. Indeed this criterion separates tourists by nationalities, which is useful for the purpose of our analysis as it allows us to distinguish between domestic and foreign tourists.

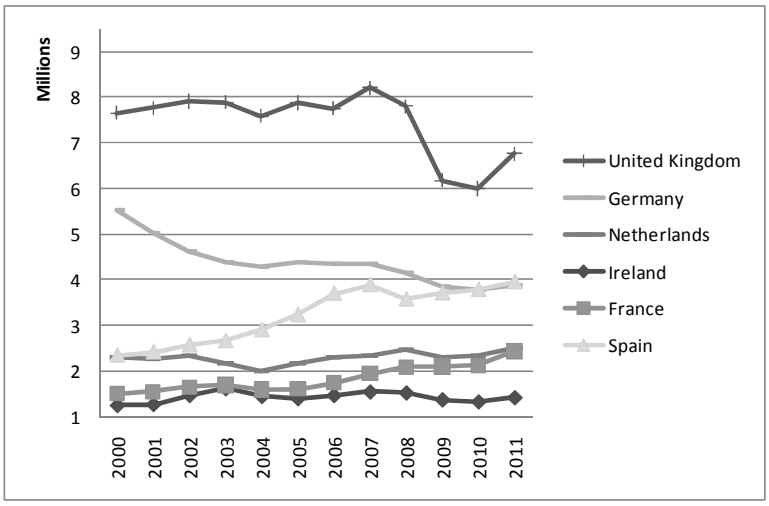
The dynamic panel data models considered are estimated using the Generalized Method of Moments (GMM) approach proposed by Arellano and Bond (1991). Among other features, the use of panel data models presents several advantages. It allows us to control for individual heterogeneity, more variability and less collinearity between variables. Hence, given that the dataset used in the present study is a short panel (short time period and many individuals), (Cameron and Trivedi, 2010), panel data methods prove useful as they allow for more reliable estimation. The model proposed allows for the identification of the main macroeconomic determinants of demand. Their contribution rests on explaining the volume of overnight stays by the six major international markets in the seven tourism regions of Portugal. Based on the number of overnight stays in hotels, tourist resorts and apartments, over a period of twelve years (2000-2011), we found that macroeconomic variables have a positive or negative impact on current international demand for each tourism region of Portugal.

The rest of the paper is organized as follows. The next section contextualizes the tourism demand pattern in Portugal in terms of international overnight stays between 2000 and 2011. Section 3 summarizes the tourism demand studies mainly concerning the applications of econometric models and in particular panel data models. Section 4 presents the econometric methodology and the data set considered in the present research. The empirical results for each region are provided in section 5, and section 6 presents a discussion of the results. Finally section 7 summarizes and presents the conclusions, limitations and perspectives for future research.

2.2 Contextual setting

Portugal, in terms of international tourism, received 26 million overnights in 2011, which correspond to 66% of total overnights in Portugal (Turismo de Portugal, IP, 2012). However, six of the major international tourism source markets, such as the United Kingdom (UK); Germany (GER); the Netherlands (NE), France (FR), Ireland (IR) and Spain (SP) have presented a decreasing trend since 2000 (see Figure 2.1).

Figure 2.1 - Total overnight stays in Portugal by place of residence (2000-2011)



Source: Turismo de Portugal, IP. (2012).

Considering the essential role that the tourism sector plays in the national economy (in 2011 tourism consumption in Portugal was 9% of GDP), the analysis of the tourism demand pattern is essential to enact a sustainable development. Although a decreasing trend seems to be observed in all markets, as illustrated in Figure 1, this tendency is not homogeneous when the focus of analysis is at the regional level. Table 2.1 shows that the main markets present different demand patterns by region.

Table 2.1- International overnight stays in Portugal per region

Countries	***Average annual growth (%) 2000-2011***					
Regions	UK	GER	NE	IR	FR	SP
Algarve	-2%	-7%	0%	0%	9%	12%
Alentejo	2%	-3%	4%	11%	3%	7%
Lisbon	-2%	-2%	2%	11%	3%	1%
Centre	6%	4%	5%	31%	8%	11%
North	-1%	2%	3%	8%	8%	7%
Azores	4%	9%	26%	5%	1%	17%
Madeira	0%	0%	2%	7%	7%	6%

Source: Turismo de Portugal, IP. (2012).

While in the Algarve and Lisbon the British market decreased on average 2%, in the Azores Islands this market shows a tendency to increase by around 4%. Concerning the

German market a decrease is observed in the Algarve (which registered an average growth of -7%). However, in the Centre, North and Azores Islands this market reveals a tendency to increase, registering average growth rates of 4%, 2% and 9%, respectively. The Dutch market shows a clear average growth in the Azores Islands of around 26%, which represents, in absolute size, an increase from 4.462 overnight stays in 2000 to 55.503 overnight stays in 2011. This behaviour is also observed in the Centre, Alentejo and North (Turismo de Portugal, IP., 2012). The analysis of the Irish market reveals a tendency to increase in all regions (particularly the Centre) of Portugal with the exception of the Algarve. Specifically, the Centre registered an average growth rate of 31% in the Irish market, which represented an effective growth overnight stays in absolute terms, from 2016 in 2000 to 39.348 in 2011 (Turismo de Portugal, IP., 2012). Concerning the French market an increasing trend in all tourism regions of Portugal is observed. Finally, the Spanish market also shows positive behaviour in every Portuguese region, although it is important to note that this increase is more evident in the Azores Islands (17%), Algarve (12%), Centre (11%), North (7%) and Alentejo (7%). These results suggest that tourism demand needs to be analysed at the regional level to account for specificities of each tourism market.

2.3 Literature review

Tourism demand refers to the consumers' willingness to buy different amounts of a tourism product at different prices during a period of time (Dwyer, Forsyth and Dwyer, 2010). This willingness is constrained by the availability of time and money to spend on vacations. Tourism is a complex decision wherein several determinants contribute to explain tourism demand. Middleton, Fyall and Morgan (2009) summarize the main determinants in nine factors: economic factors; comparative prices; demographic factors; geographic factors; socio-cultural attitudes to tourism; mobility; government/regulatory; media communications; and information and communication technology. Income factors particularly were used in many empirical studies that adopted econometric models to measure tourism demand elasticities. Findings showed that the income elasticity of tourism demand, especially for international demand, is positive and above one. Typically, economic products with such elasticities are perceived as luxury goods, as posited by Smeral (2012); Lim (1997); and Crouch (1995).

Tourism demand's main determinants support the explanation of why the populations of some countries have a high propensity to participate in tourism, whereas the populations in others show a small propensity to travel (Vanhove, 2005).

In terms of quantitative methods, Surugiu *et al.* (2011) indicated that tourism demand has been studied using simple and multivariate regressions; see Allen and Yap (2009); Luzzi and Fluchiger (2003); and Garín-Muñoz and Amaral (2000). The use of panel data methods presents several advantages. As stated by Ramos and Rodrigues (2013), it allows one to control for individual heterogeneity, to consider more information, more variability, less collinearity between variables; it provides more degrees of freedom and greater efficiency and allows one to study the dynamic adjustment process. It also allows for the identification and measurement of effects that simply are not detected in data that are purely temporal or cross-sectional, and it allows for small samples.

The literature review that follows focuses mainly on studies which have attempted to generate international tourism demand elasticities by using dynamic panel data models. Extending the work of Song and Li (2008) we partially updated their literature review, finding several studies that modelled tourism demand using dynamic panel data models. According to Song and Li (2008) this method has rarely been applied to tourism demand analysis.

Since 2010, most recent studies have tested the relationship between tourist arrivals and GDP, relative prices, distance, population, exchange rate and several dummy variables, which account, among others, for wars, diseases, economic and social crises (see, *e.g.*, Deng and Athanasoupoulos, 2011; Falk, 2010; Görmüs and Göçer, 2010; Ibrahim, 2011; Leitão, 2010; 2011; Massida and Etzo, 2012; Ouerfelli, 2010; Rodríguez and Ravidulla, 2012; Seetanah, 2011; Seetaram, 2012; Seetaram, 2010; Surugiu *et al.*, 2011; and Töglhofer, Eigner and Prettenthaler, 2011). These studies have explored the relationship between the former variables and tourist arrivals. The results available highlight the dynamic nature of tourism demand; see Seetaram (2010). Seetaram (2010) used dynamic panel data cointegration techniques to determine the elasticities of tourism arrivals in Australia. The results show that tourism demand in Australia is inelastic concerning all independent variables used in the study (income, price and air fares).

Leitão (2010) applied static and dynamic panel data models to tourism demand in Portugal and estimated demand equations using tourism inflow data for the period from 1995 to 2006. Results suggest that trade, population and income are the main determinants of tourism demand to Portugal, rather than relative prices.

Concerning research carried out in 2011, Massidda and Etzo (2012) investigated the main determinants of Italian domestic tourism demand as measured by regional bilateral tourism flows using dynamic panel data procedures. Results showed differences at the aggregate level and at the sub-sample level. However, for Italian tourists, domestic and international destinations act as substitutable goods. Santana-Galleno *et al.* (2011) introduced static and dynamic models to analyse both long- and short-run relationships for OECD countries. A good agreement is generally found between tourism and trade in both long- and short-run relationships for the OECD countries. Seetanah (2011) investigates the potential contribution of tourism to economic growth and development in 19 countries (island economies) using a dynamic panel data model. The results of the study suggest that tourism development is an important factor that explains economic performance in island economies. Surugiu *et al.* (2011) used static and dynamic panel data analysis to investigate the impact of specific factors across countries on tourism demand in Romania. The results show that per capita GDP, trade and population have a significant positive influence on international arrivals. The study conducted by Töglhofer *et al.* (2011) examined the impacts of snow conditions on tourism demand in 185 Austrian ski areas over the period 1972/1973 to 2006/2007. In addition to time-series regression models, the authors also used static and dynamic panel data models. The findings showed a positive relationship between overnight stays and snow conditions in the majority of areas. Deng and Athanasopoulos (2011) modelled Australian domestic and international inbound travel using an anisotropic dynamic spatial lag panel Origin-Destination (OD) travel flow model. These authors modelled tourism behaviour as travel flows between regions. This study was the first that formally incorporated both temporal and spatial dynamics into tourism demand modelling. Results showed that spatial patterns are found to be most significant during peak holiday seasons. Di Lascio, Giannerini, Scourcu and Candela (2011), applied a panel data analysis to study the relationship between cultural tourism and temporary art exhibitions in 52 Italian provinces over the period 2003-2007. Findings show that temporary art exhibitions contribute to increasing tourist flows if they are part of a

structural characteristic of a destination. Based on a panel data analysis, another study was conducted by Ibrahim (2011) who used a dynamic demand model for tourism in Egypt in order to identify and estimate income, tourism price and trade value elasticities of tourism demand. Results showed that tourism in Egypt is very sensitive to price. Rey, Myro, and Galera (2011) estimated the impact of low-cost airlines on Spanish tourism during the first decade of the 21st century, looking at tourist traffic from the main EU-15 member states using a dynamic panel data model. Results suggested that, a rise in number of visitors travelling by low-cost airlines would increase the average number of tourists from EU-15 countries. Finally, Keum (2011) proposed a dynamic econometric model for the causal analysis of panel data in order to examine bilateral tourism and trade flows between Korea and its 21 trading partners worldwide over a 12-year period. Results suggested that policies aimed at stimulating international human interchange may lead to an increased goods trade.

Finally, from a summary of studies carried out during the first half of 2012, it is possible to identify a few papers that used dynamic panel data models. Dritsakis (2012) suggested an analysis of the relationship between economic growth and tourism development in seven Mediterranean countries. Results showed that there is solid evidence of panel cointegration relationships between tourism development and GDP in the case of the seven Mediterranean countries under consideration. In light of this, tourist receipts have a higher impact on GDP in all seven Mediterranean countries. Concerning studies that tested the relationship between tourist arrivals and other macroeconomic variables, it is possible to highlight the studies by Rodríguez and Rivadulla (2012) and Seetaram (2012). The former analyses the main determinants of international tourism demand in Spain through the estimation of a dynamic panel data model. Results suggested a high fidelity of visitors to the destination and the economic conditions of visitors seemed to be very significant in determining international tourism demand. Regarding the second study by Seetaram (2012), a dynamic demand model is developed and estimated. The author suggested a model that uses, income, own price, price of a substitute destination, airfare and immigration as explanatory variables in order to explain international tourism arrivals in Australia, provided from 15 main markets for this country. Hence, the objective was to estimate the relationship between immigration and inbound tourism. The results also confirm that demand is dynamic, as

evidence of a relationship between immigration and inbound international tourism to Australia was found.

Tourist arrivals/departures is the dependent variable most frequently used in international tourism demand models (Lim, 1997). However, international tourism demand is often measured either through tourist expenditure or the number of overnight stays by tourists in the destination country (Ouerfelli, 2008; and Ibrahim, 2011). Concerning the explanatory variables, Ramos and Rodrigues (2013); Surugiu *et al.* (2011); Song and Li (2008) and Lim (1997), summarized most variables typically used in tourism demand models. In this paper, we consider a dynamic panel data model for the number of international tourist nights in each region of Portugal in order to identify the main macroeconomic determinants of this demand as well as their elasticities.

2.4 Methodology

The main objective of this paper is to determine and analyse the main international tourism demand factors of the seven tourism regions of Portugal. The proposed model of analysis is a dynamic panel data model, which was applied to a panel data set collected from seven tourism regions (Alentejo, Algarve, Azores, Centre, Lisbon, North and Madeira) in Portugal from 2000 to 2011. The data consists of annual overnight stays of international tourists, such as Irish, British, Dutch, German, French and Spanish in these regions. These markets represent more than 85% of the total overnight stays of international tourists in Portugal.

Concerning the set of variables used in the panel data model, as previously mentioned, tourism demand is measured in terms of the number of overnight stays of international visitors in hotels, apartments and resorts in the seven tourism regions of Portugal. The explanatory variables used were per capita income (per capita GDP), relative real prices, unemployment rate and final household consumption.

The data for the number of overnight stays of international tourists in hotels, apartments and resorts in each of the seven tourism regions of Portugal between 2000 and 2011 was collected from the official statistics of the Tourism Institute of Portugal (TIP). The annual data for per capita income (per capita GDP), relative prices, unemployment rate

and final household consumption was obtained (years of 2000 and 2011 were included) from the EUROSTAT for each of the six main international demand markets for Portugal.

2.4.1 Model specification and estimation

According to the variables previously indicated, the tourism demand function considered is,

$$OVER_{i,t}=f\,(PCGDP_{i,t},\ UNP_{i,t},\ HICP_{i,t},\ FHC_{i,t}). \quad (7)$$

where

i represents the country of origin and t the year.

$\Delta = 1- L$: is the first difference and L is the conventional lag operator.

α: is a constant which is different for each country of origin.

$OVER_{i,t}$: is the number of overnight stays of tourists from country i in year t.

$OVER_{i,t-1}$: is the lagged dependent variable.

$PCGDP_{it}$: is real annual per capita GDP of country i in year t.

UNP_{it} : is the unemployment rate in country i in year t.

$HICP_{it}$: is the harmonised consumer price index of country i in year t.

FHC_{it} : is final household consumption of country i in year t.

According to Morley (1998) if the impact of past tourism is neglected, the effect of the relevant variables will tend to be overestimated (since the estimated coefficients will involve direct and indirect effects). Thus, a dynamic panel data model was estimated. The problem of small sample validation for the simple estimation procedures of panel data models may arise as the number of years available is relatively small (T = 12). To solve this problem the GMM approach of Arellano and Bond (1991) was applied, *i.e.*, the following model was estimated:

$$\Delta lnOVER_{i,t}= \alpha_i+ \beta_1 \Delta lnOVER_{i,t-1}+\beta_2 \Delta lnPCGDP_{i,t}+ \beta_3 \Delta lnUNP_{i,t}+ \beta_4\, ln\Delta HICP_{i,t}+\beta_5 \Delta lnFHC_{i,t}+ \ + \Delta\varepsilon_{i,t} \quad (7.1)$$

In this type of dynamic models, this methodology offers asymptotically normal and consistent estimates of the parameters. The interpretation of the estimated coefficients as elasticities is possible due to the double-logarithmic form of the model (Rodríguez and Rivadulla, 2012). It should be noted that the results presented at the top of table 2

are short-run demand elasticities. Therefore, in order to obtain long run elasticities, it is necessary to divide each of the estimated coefficients of the explanatory variables considered by the autoregressive component, excluding deterministic.

The adoption of the proposed macroeconomic determinants is supported by the following assumptions. Per capita GDP (PCGDP) is one of the variables typically used in estimating tourism demand, and its sign corresponds also to the purchasing power parity hypothesis, spending ability and the standard of living in the countries of origin. Several studies reveal and confirm that for GDP the expected sign is positive, showing that tourism needs to be seen as a luxury good (Crouch, 1995; Seetaram, 2012; Smeral, 2012; and Stabler, Papatheodorou and Sinclair, 2010). In several studies, unemployment (UNP) is a proxy of an individual political risk index (*see* Eilat and Einav, 2004; and Sequeira and Nunes, 2008). This index includes components as well as government stability and socio-conditions (unemployment, consumer confidence and poverty). Thus, we individualized the unemployment variable, because of its increasing pattern in the international tourism markets to Portugal during the period under analysis.

Concerning the price indices variable, the harmonized consumer price index (HICP) was considered. Relative prices were used in several studies (see, *inter alia*, Allen and Yap, 2009; Eilat and Einav, 2004; Garín-Muñoz, 2009; Garín-Muñoz and Amaral, 2000; Habibi, Rahim, Ramchandran and Chin, 2009; Hanafiah and Harun, 2010; Leitão, 2010; Rodríguez; Martínez-Roget and Pawlowska, 2012; Song and Fei, 2007; and Surugiu *et al.*, 2011) to analyse international tourism demand using panel data models. As suggested in several studies, relative prices influence and reduce tourism demand. For instance, since a negative sign of the coefficient is to be expected, an increase in this variable reduces the number of tourists (Guarín-Muñoz and Amaral, 2000; Leitão, 2010; and Seetanah, 2011).

Concerning final household consumption (FHC), in a first approach its relationship with income is clear. However, according to EUROSTAT (2012), (COICOP categories at two-digit level, ESA95 Annex IV, the new transmission programme - Regulation (EC) N° 1392/2007), this indicator is an aggregate of consumption which incorporates, among others, consumption in recreation, culture, restaurants and hotel services.

2.5 Results of the study

This section presents the estimation results of the dynamic model, which are reported in Table 2.2. Since, in the literature, less attention has been paid to dynamic models of tourism demand (Brida and Risso, 2009), more attention will be paid to the analysis of the results based on the Arellano-Bond estimator to allow for the interpretation of elasticities of international tourism demand in each tourism region of Portugal.

Table 2.2 - Estimation results of the dynamic model of international tourism demand (2000-2011)

Variable	Portugal	Algarve	Alentejo	Lisbon
ln $OVER_{i,t-1}$	.576 (0.000)	.699 (0.000)	.361 (0.003)	.473 (0.00)
ln $PCGDP_{i,t}$	.374 (0.000)	ns	ns	ns
ln $HICP_{i,t}$	ns	ns	ns	-.731 (0.012)
ln $UNP_{i,t}$	ns	ns	.213 (0.001)	.112 (0.04)
ln $FHC_{i,t}$	ns	0.449 (0.004)	.618 (0.007)	1.085 (0.00)
Cons	2.361 (0.029)	ns	ns	ns
Wald test	132.81	205.25	64.18	87.80
# of obs.	60	59	58	58
Long run parameters				
ln $PCGDP_{i,t}$	.885			
ln $HICP_{i,t}$				-1.387
ln $UNP_{i,t}$			0.334	0.213
ln $FHC_{i,t}$		1.495	0.968	2.059

Table 2.2 - Estimation results of the dynamic model of international tourism demand (2000-2011) (cont.)

Variable	Centre	North	Azores	Madeira
ln $OVER_{i,t-1}$	ns	.576 (0.000)	.488 (0.000)	.426 (0.000)
ln $PCGDP_{i,t}$	3.520 (0.000)	.909 (0.000)	2.915 (0.000)	ns
ln $HICP_{i,t}$	ns	ns	ns	ns
ln $UNP_{i,t}$	.424 (0.044)	ns	ns	-.146 (0.007)
ln $FHC_{i,t}$	ns	ns	ns	1.868 (0.008)
Cons	-25.554 (0.001)	-4.450 (0.015)	-24.920 (0.000)	ns
Wald test	35.70	133.78	205.46	90.25
# of obs.	59	60	60	58
Long run parameters				
ln $PCGDP_{i,t}$		2.149	5.698	
ln $HICP_{i,t}$				
ln $UNP_{i,t}$				0.256
ln $FHC_{i,t}$				3.259

Notes: Figures outside parentheses are coefficients and in parentheses **are the corresponding p-values**. **ns** indicates not significant. The effects are measured in per capita terms

Source: Own elaboration.

The variable $ln\,PCGDP_{i,t}$ presents different behaviour according to each Portuguese tourism region. In the reviewed studies this variable normally presents a positive sign (Eilat and Einav, 2004; Garín-Muñoz and Amaral, 2000; Leitão, 2010; Maloney and Montes Rojas, 2005; Seetanah, 2011; and Surugiu *et al.*, 2011). In fact, the Centre, North and Azores Islands show a positive sign. As regards the Azores Islands and Centre region, the estimated coefficient for this variable has a value which is higher than 1, so we can conclude that travelling to those regions is considered by international tourists as a luxury good. Concerning long-run elasticities, tourism for the Azores and North regions is very dependant on the economic situation of the countries of origin. In the other regions the estimated coefficient is not significant, suggesting that per capita GDP does not influence tourism demand.

Concerning relative prices, $lnHICP_{i,t}$, the negative sign of the coefficient is the expected one, because an increase in this variable reduces the number of tourists (Garín-Muñoz and Amaral, 2000; Leitão, 2010; Seetanah, 2011; and Seetanah, Durbarry and Ragodoo, 2010). The short-run estimated price elasticity for Lisbon is -0.731 suggesting that international demand is price inelastic. Thus, we may conclude that a 1% increase in tourism prices will lead to a fall of around 0.73% in arrivals, *ceteris paribus*, thus implying that relative price is an important factor. However in the long run (-1.387) international tourists show themselves to be more price sensitive. Consequently, the industry must pay attention to price competitiveness, because this price sensitiveness may be a reflection of the demand for alternative destinations. In the other regions the estimated coefficient is not significant.

Regarding the unemployment rate, results show that the sign is negative for Madeira. Following this result, an increase of 1% in the unemployment rate in the international tourism markets will result in a decrease of 1% for the Madeira Island in international overnight stays. In other regions, such as Alentejo, Lisbon and Centre, the short-run estimated coefficient is also significant; however, the sign is positive.

The variable $lnFHC_{i,t}$ has a positive impact for the Algarve, Alentejo, Lisbon and Madeira. In this way it is possible to quantify a positive effect on overnight stays when the final household consumption in the international tourism markets increases. A first attempt to compare the short-run results shows that Madeira (1.868) has the highest

value when compared to Lisbon (1.085), the Alentejo (0.618) and the Algarve (0.449). According to these estimates, international tourism to Madeira and Lisbon seems to behave as a luxury good. However, in the long-run it is more than evident that international tourism demand for Algarve (1.495), Lisbon (2.059) and Madeira (3.2598) is very dependant on the economic situation of the origin countries. For the other regions the estimated coefficient is not significant. The results gathered by some regions of Portugal, provided by the dynamic model, particularly concerning GDP and the final household consumption variables, are in line with what numerous studies evidence (*e.g.*, Smeral, 2012; Maloney and Montes Rojas, 2005 and Crouch, 1995). The demand for international tourism is elastic concerning available income, i.e. tourism consumption assumes the features of a superior or even a luxury good for the cases where the elasticity is above one, as are the cases of Algarve, Lisbon, North, Azores and Madeira.

To conclude, the lagged dependent variable reports different coefficients in each tourism region of Portugal. Comparing the estimated coefficients, we observe that the result achieved by the Algarve (0.6992), suggests that around 70% of total international overnight stays are attributable to international visitors that persist in repeating their visit to this region, which shows evidence of strong loyalty to this destination. Finally, the data analysis and results allowed us to identify a relation between overnight stays in hotels, unemployment, income (GDP), relative prices and final household consumption.

2.6 Discussion

Previous results are important to set new policies in tourism management. The main findings that may feed new policies are the following: international tourism demand is heterogeneous and this suggests that Portugal has quite different tourism products attracting different markets. In several regions, the high elasticity with respect to per capita income was confirmed, suggesting that tourism in Portugal may assume the features of a luxury good, suggesting a high economic potential. Furthermore the regions of Centre and Azores evidence several increasing slopes concerning the average growth rate (between 2000 - 2011) for the Irish (31%) and the Dutch (26%) tourists. However, in the Algarve it was possible to identify long-run elasticities above one which give this region the status of a major luxury tourism destination, at least for the international tourists visiting Algarve. On the other hand British and German tourists show a decreasing pattern of overnight stays, which may be due to the long relation these markets have with Portugal. Generally other variables were identified as important explanatory factors. Per capita income, unemployment rate and final household consumption were identified as the most shared explanatory variables in each tourism region, suggesting that monitoring the macroeconomic variables of international markets should drive the strategic plans for tourism in Portugal.

For a deeper understanding of international tourism demand, the analysis needs to go beyond micro- and macroeconomic variables, since there are social and psychological determinants of choice that these models are not able to explain. As stated by Kahneman and Tversky (1979) human behaviour is not so rational and exactly economic. On the other hand, tourism, as Pearce and Lee (2005) asserted, seems not to assume a standard of consumer behaviour, because each tourist seeks an experience and above all the realisation of a dream. In this way, in different countries explanatory variables may have different influences.

Changes in international tourism demand are influenced by several factors. Nevertheless almost all studies focus on economic factors in order to estimate satisfactory cause-effect relations (Lim, 1997). In the present study, estimations are based on a previous recognition of the current situation and focus on tourism demand in Portugal, where the main international markets have always been very dynamic, with even those who repeat their visit saying there is still plenty to discover (Correia, Pimpão and Crouch, 2008).

2.7 Conclusion and implications

The objective of this study is to explain the evolution of international overnight stays in each region of Portugal. In this paper, the determinants of international tourism demand in Portugal and in seven Portuguese tourist regions were identified. The analysis includes the main tourism source markets to Portugal, such as the United Kingdom, Germany, the Netherlands, Ireland, France and Spain, and the macroeconomic explanatory variables used are income, household consumption, unemployment rate, and relative prices from 2000 to 2011 for the former international markets in each of the seven tourism regions of Portugal, representing 85% of the total overnight stays of international tourists in Portugal.

The contribution of this study rests on the better understanding of international tourism demand for each of the seven tourism regions in Portugal, through the identification of different macroeconomic determinants that explain the international tourism demand for each region and also the elasticity estimates. The results obtained in this paper suggest that international tourism demand has different patterns depending on the region, and that their basis is underpinned by an origin market with similar social and economic features. Moreover, international tourism demand for Portugal is dynamic. Another main conclusion of this study is the coefficient estimate of the lagged dependent variable for Portugal (0.57) and Algarve (0.69), which may be interpreted in terms of high loyalty of consumers. Concerning theoretical implications, generally these results are in line with previous studies (*e.g.* Leitão, 2010; Rodríguez and Rivadulla, 2012; Seetaram, 2012; and Surugiu *et al.*, 2011). However, to understand international tourism demand in Portugal and specifically in each region of the country, further research is necessary.

This study has some limitations. Future research should include more years and other international markets that are emerging in Portugal, such as Brazil and Russia. A further important contribution is to set up models that allow an exploration of how motivations have influenced tourists' choices over the last eleven years in Portugal.

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CHAPTER 3

HETEROGENEITY IN TOURIST MOTIVATIONS: THE CASE OF THE ALGARVE

(PAPER 2)

HETEROGENEITY IN TOURIST MOTIVATIONS: THE CASE OF THE ALGARVE

JAIME SERRA; ANTÓNIA CORREIA & PAULO M.M. RODRIGUES[5]

Abstract

This chapter examines how motivational and behavioral indicators influence overnight stays of international tourists in the Algarve. The method includes a first selection of the motivations associating with high heterogeneity over the years considered. Followed by a correlation matrix to assess how tourists' behavioral patterns relate with overnight stays. Behavioral patterns by year are defined based on motivations, socio-demographics, intentions, and lagged satisfaction. The correlation analysis was conducted using 15,542 observations collected at Faro international airport, from 2007 to 2010. The findings include ten main motivations and reveal that these motivations are statistically different by country and over the years. This study contributes to the overall understanding of the dynamics of tourism demand.

Keywords: Algarve; demand; motivation; tourism; socio-demographics.

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3.1 Introduction

Tourism is facing changes concerning the pattern of tourists' behavior. Further exploration and analysis of the effects of tourists' motivations and socio-demographic characteristics allows the tourism industry to understand what may explain the new patterns of international tourism demand. Despite the number of studies in the field of tourists' motivations, an approach for the understanding of the dynamic behavior of tourists' demand is still needed. However, is possible to explain the dynamic nature of tourism demand at an individual level, for example, through motivations (Seeteram, 2010).

As Huang and Hsu (2009) argue, tourist motivations are a multidimensional construct able to explain tourists' choices, in a dynamic context. Furthermore, more than merely identifying tourist motivations is critical to understand their influence on the evolution of tourism demand. Tourists' socio-demographic characteristics represent additional dimensions important to consider when analysing tourism demand. According to Heckman (2001), these variables account for heterogeneity in tourism behavior.

This study aims to identify the motivations, taking heterogeneity by country and by years into account; and to estimate the extent to which socio-demographic, motivational, and behavioral variables influence overnight stays of international tourists in the Algarve. This study contributes to the overall understanding of the dynamic patterns of tourism demand. In particular, this chapter provides empirical evidence on the influence of the combination of sociodemographic, behavioral and motivational variables on over overnight stays.

3.2 Theoretical considerations

Economic theory integrates income and price as main determinants in order to determine international tourism demand. However, noneconomic factors should also be considered (Crouch, 1994). Among several determinants, and concerning consumer behavior theory, personal factors are related to socio-demographic characteristics of individuals. According to Saayman and Saayman (2009), socio-demographic variables can be used to explain travel behavior. Tourists' socio-demographic characteristics can

be included as determinants of the demand to account for heterogeneity (Heckman, 2001).

Motivations for travel change over time and are influenced by past holiday experiences. Dann (1977, 1981) introduced the Pull and Push Theory of tourist motivations, which discussed and explained the factors that predispose a person to travel and those that attract the tourist to a given destination. The former are related to internal motives that explain why people travel (Crompton, 1979; Dann, 1977). Pull factors are related to external motives mainly exhorted by destination attributes (Crompton, 1979). Thus, motivations may be understood as the strength to practice a specific action and contain results of situation-person interactions (Gnoth, 1997). The role of motivations on travel behavior is emphasised by Mansfeld (1992), who alerts to the fact that two further problems exist to prevent the attainment of a reasonable theory that would enable the prediction of tourist behavior based on travel motivations. The first relates to the heterogeneity of the motives that trigger the decision to travel, and the second is the complex nature of travel motivations.

The relevant literature does not investigate deeply the changing patterns of behavior concerning tourist motivations. The patterns represent important information for destination stakeholders. Pearce and Stringer (1991) reveal that tourists can be very selective about how they relate their stories of travel, and extrinsic motives are usually prominent in the profile definition of motivation.

Past behavior at a destination is identifiable as one of the constructs of overall satisfaction and had a large combined effect on motivations (e.g., Huang and Hsu, 2009). Satisfaction associates sometimes with repeat visits (Kozak and Rimmington, 2000). Overall satisfaction and the number of prior visits influence return intention, especially in mature destinations (Kozak, 2001). Furthermore, according to the same author, destinations attributes influence future behavioral intentions and satisfaction which will lead to the likelihood of recommending and return intention.

3.3 Hypothesis

As a result the previous theoretical framework and literature review informs the construction of the following hypotheses. H1: Socio-demographic characteristics are age, gender, marital status, level of education, income, employment status, and nationality associates with overnight stays. H2: Travel companion correlates with overnight stays. H3: Tourists' pull motivations over the years correlates with overnight stays. H4: Past visits to a destination correlates with overnight stays. H5: Overall satisfaction with past visits is positively correlated with overnight stays. H6: Return intention to destination correlates with overnight stays. H7: Individuals' attitudes in recommending a destination correlates with overnight stays.

3.4 Method

Following tourism demand studies in Algarve conducted by Correia and Crouch (2004), which find significant differences of perceptions and motivations of Algarve according to nationality, the present study is based on data provided by means of a questionnaire applied between 2007 and 2010, which was presented to a stratified, random sample of international tourists at their departure from Faro airport (Correia and Pimpão, 2012). The population of the study is matched to all international tourists visiting Algarve for the purpose of holidays/leisure, business or visiting family and friends. Data comes from a project granted by ANA airports of Portugal that aims to monitor passengers and tourists. Questionnaires were administrated in the airport's departures lounge, and over the four years a sample of 15542 tourists were interviewed. The sample size of 15542 persons corresponding to a total of 2636 questionnaires in 2007; 2187 in 2008; 5938 in 2009 and 4781 in 2010, covers participants from age groups ranging from the less 20s to over 50 years. We also observed a wide variation in respondents' average household monthly income, which ranged from below 2 000 Euro to over 8 000 Euro. On average, the respondents belonged to the mid-age segment (the average age ranged from 31 to 50 years of age). A large portion of these respondents are married (more than 67.3%) and employed (62.3%).

Table 3.1 - General profile of respondents, sample size and response rates

Variable label	*%*	*Variable label*	*%*
Age		***Family income (monthly average)***	
up to 30	31.2	up to 2000 €	15.7
31-50	48.8	2001€ - 3500€	22.4
51 and over	20.0	3501€ - 5000€	40.8
Gender		5001€ - 8000€	10.9
Male	46.3	8001€ and over	10.2
Female	53.7	***Work Situation***	
Marital status		Employed	62.3
Married	67.3	Unemployed	22.0
Single	29.9	Not active	9.3
Divorced/Widowed	2.8	Student	5.0
Education		Retired	1.4
Elementary	22.5	***Travel companion***	
Secondary	75.9	Alone	9.6
Universitary	1.6	Spouse/Family	73.0
Nationality		Friends/Group	16.8
United Kingdom	29.8	Other	0.6
Germany	24.2	***Past visit behavior***	46.6
The Netherlands	5.3	First time visit	53.4
Ireland	18.1	***Return intention***	
Scandinavia (Norway, Denmark, Sweeden, Finland)	8.9	No	48.0
Others	13.7	yes	52.0
		Recommendation	
		No	55.5
		yes	44.5
N (number of respondents)	**15542**		

Source: Own elaboration.

In order to test the hypotheses, a correlation matrix was estimated by year (2007-2010) in order to identify whether overnight stays is correlated with sociodemographic variables such as nationality, age, gender, marital status, education, income, work situation; travel companion; past behavior visit; overall satisfaction; return intention; recommendation; and pull motivations, such as, cleanliness, cultural and historical resources, information available, closeness to home, accommodation, gastronomy, price, hospitality, sightseeing and excursions, and golf facilities. Assuming that tourist motivations are heterogeneous, the Scheffé test was used to test for significant differences by year. The results confirmed differences in tourist motivations across the years. The previous tourist motivations considered, were the motivations that present more variability over the years under analysis.

3.5 Findings

This section presents the results based on the correlation matrix which appears in Table 3.2. After estimation of the correlation matrix, the variables that are correlated with overnight stays were identified.

Table 3.2 - Correlation matrix

		Overnights	Country	Past Behaviour	Travel Companion	Cleanliness	Closeness to home	Price	Sightseeing and Excursions	Return intention	Recommendation	Gender	Age	Marrital	Education	Work Situation
Overnights 2010	Pearson Correlation	1	-,001	**-,153****	**-,081****	-,019	,014	**-,075****	**-,051****	**-,069****	-,010	**,041****	**,083****	**,064****	**-,031***	**-,040****
	Sig. (2-tailed)		,953	,000	,000	,191	,337	,000	,000	,000	,474	,005	,000	,000	,030	,006
Overnights 2009	Pearson Correlation	1	**-,052****	**-,115****	**-,056****	**,034****	**,027***	-,013	-,007	**-,049****	-,016	,007	**,093****	**,039****	-,015	**-,064****
	Sig. (2-tailed)		,000	,000	,000	,010	,040	,308	,591	,000	,214	,590	,000	,003	,255	,000
Overnights 2008	Pearson Correlation	1	-,006	**-,105****	**-,138****	,001	-,033	-,030	-,010	**-,064****	,025	,026	**,051***	,031	-,013	-,037
	Sig. (2-tailed)		,788	,000	,000	,969	,119	,167	,632	,003	,238	,217	,017	,151	,532	,084
Overnights 2007	Pearson Correlation	1	,009	**-,041***	,002	-,018	**-,047***	-,014	,031	-,019	**,046***	-,021	**,075****	**,043***	**-,054****	.[c]
	Sig. (2-tailed)		,642	,037	,923	,351	,017	,479	,109	,321	,018	,276	,000	,026	,005	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Own elaboration.

According to the hypotheses and their theoretical framework, the findings suggest the following conclusions. Regarding the variables of socio-demographic characteristics differences across the years are identified between nationalities, work situation status, age, gender, level of education and marital status. Concerning marital status, in 2007 (r=0.064), 2009 (r=0.039) and 2010 (r=0.064) a positive correlation which may suggest that the Algarve is a destination sought after by couples and families, which is in accordance with Correia and Crouch (2004). These findings are presented in Table 3.2 and according to the theoretical and empirical context considered *hypothesis 1 is not rejected*.

Concerning travel companion, in 2008 (r= - 0.138), 2009 (r= - 0.056) and 2010 (r= - 0,081) a negative correlation with overnight stays is observed. Since the Algarve is considered a sun and sand family destination and also contains a considerable amount of

repeaters, negative correlation results suggest that tourists dependables profile tend to stay for shorter periods of time over the years (Plog, 2001). Decreasing patterns of this variable may be justified by Alegre *et al.* (2011: 558) remark that this could be a "consequence of the individuals' time and financial constraints and of other demographic and socioeconomic characteristics that determine their preference for a "short" or "long" holiday." According to the theoretical and empirical context considered H2 receives support.

Concerning tourists' motivations results seem to suggest different patterns of correlation on overnight stays in the Algarve. According to the findings of Correia and Crouch (2004), sun and sand are the predominant leading choice attributes among tourists in the Algarve. However, assuming this implicit destination attribute, the present research focuses on the motivations that evidence more variability. Hence, cleanliness associates positively with overnight stays (r= 0.034); closeness to home in 2007 associates negatively with overnight stays (-0.47), however in 2009 shifts to a positive correlation (r= 0,027); Price (r= - 0.075), sightseeing and excursions (r= - 0.051) is negatively correlate with overnight stays. These results suggest that in fact over the years the motivations are changing, which are in line with recent findings in tourism motivations studies (e.g., Pearce and Lee, 2005), which explains how motivations change. Accordingly, motivational factors are present over the years, however, only cleanliness, closeness to home, price and sightseeing and excursions motivations are significant. Hence, according the above results H3 is partially not rejected.

Correlation matrix results show the significance of past behavior in all years. However, is negatively correlate (e.g., for 2010 r = -0153) with overnight stays, which suggests that repeat visitors tend to spend less time at destinations than in their first visit. Results are in line with Opperman (1996), who observes that repeat visitors tend to spend less time than a first-time visitor. Hence, from the regression results H4 is not rejected.

Although overall satisfaction was considered in the correlation estimation is not significant in any of the years considered. A possible reason is that some other variables considered in the model, which can be assumed as proxies for satisfaction (return intention and recommendation) are significant in some of the years. Thus, considering the above results H5 is rejected.

The return intention is significant in some of the years. However, results may indicate that revisiting intentions is negatively correlated (year 2008 r= -0.064, and year 2010 r = - 0.069) with overnight stays in the Algarve. Although return intentions could be evidence of a certain degree of loyalty (Opperman, 2000), first time visitors in the Algarve tend to spend more time rather than repeat visitors. In view of the above results H6 is partially not rejected. Recommendation behavior presents a positive correlation with overnight stays (r= 0.046) in the Algarve, although this is only observed for one year and the finding is significant only for 2007. Thus, H7 is partially not rejected.

3.6 Conclusion and implications

This research presents several theoretical contributions. The study confirms that non-economic antecedents contribute to explaining international tourism demand. This conclusion is in line with the findings of Cho (2010). Another contribution concerns international tourism demand models which are commonly based on classical economic theory. Thus, introducing behavioral and motivational factors could help in the better understanding of tourists' choice behavior. The findings confirm the assumptions provided by Papatheodorou (2001) who highlighted and warned against the fact that the use of traditional demand theory in tourism suffers from a number of serious drawbacks, since it ignores specific particularities of tourism products.

Concerning the contribution to the scope of behavioral and motivational theories, findings on the return intention variable confirmed that it can be significant when isolated from the issue of satisfaction. Indeed present findings also confirmed the statement of theories of human behavior (Sonmez and Graef, 1998), which suggests that past behavior is a good predictor of behavioral intention and actual future behavior. Thus, the correlation of past behavior of international tourists in Algarve negatively influences overnight stays. Tourist motivations in Algarve present heterogeneous patterns over the years and confirm the conclusions that motivations change over time put forward by Pearce and Lee (2005). Therefore, tourists' motivations for sun and sand destinations are dynamic and present differences on the influence of overnight stays when combined with nationalities.

This study estimates the extent to which motivational, behavioral and socio-demographic factors influence overnight stays of the main international tourism markets in the Algarve. In order to test several hypotheses, the results showed that a combination of socio-demographic, motivational and behavioral factors influence overnight stays. Hence, the results presented confirm the dynamic pattern of tourist behavior, that is, that the variables that influence overnight stays differ over the years considered. Results provided by the correlation matrix across the years indicate that not all motivations reveal a significant influence on overnight stays. Those found significant were, sightseeing and excursions, cleanliness, closeness to home and price. An interesting finding is related to the dynamic pattern of tourist motivations, which appear with changing patterns over the years. This last finding is useful for tourism management authorities in order to adequate the typical sun and sand product of the Algarve to the pattern of other tourist motivations. Future studies concerning the heterogeneous pattern of tourist motivations are necessary in order to understand the heterogeneous characteristics of international tourism demand. Furthermore, exploring and ranking travel motivations is an interesting issue that needs to be addressed in order to identify turning points in tourist preferences and consequently better understand tourist destination choice behavior.

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CHAPTER 4

RANKING OF TOURIST PREFERENCES FOR ALGARVE: AN ORDERED PROBIT APPROACH

(PAPER 3)

RANKING OF TOURIST PREFERENCES FOR ALGARVE: AN ORDERED PROBIT APPROACH

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Abstract

This paper aims to rank Algarve's tourists' preferences in a leisure continuum from 2007 to 2010. An ordered probit model was employed to classify preferences by taking into account market heterogeneity. Preference turning points and continuity points are depicted to illustrate the dynamics of tourists' preferences. Data were obtained from a survey applied to international tourists who spent their vacations in Algarve. The sample of the study is matched to all international tourists visiting Algarve for the purpose of vacations/leisure. A total of 15542 people were interviewed of which, 2636 questionnaires were collected in 2007; 2187 in 2008; 5938 in 2009 and 4781 in 2010. Results reveal that a set of attributes are more preferred than others, moreover attributes, such as cleanliness, closeness to home, accommodation, gastronomy, and golf facilities, are most valued during the first visit, suggesting that these attributes may be considered as competitive factors in Algarve. On the other hand, any of the attributes considered is valued on a repeat visit, suggesting that these factors are not sufficiently developed to retain tourists, which is the ultimate aim of any tourism destination. Managerial implications of the results are also discussed.

Keywords: travel motivations, tourism demand, tourist preferences, ordered probit regression

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4.1 Introduction

This study analyses the rank formation of tourists' preferences based on their previous experience at the destination, travel companion, overall satisfaction, behavioral intentions and socio-demographic characteristics. The geographic scope of the research is the Algarve, which is located in the south of Portugal and is a worldwide renowned destination. Emerging preferences and strong competition challenge the position of tourism destinations, such as the Algarve – a mature sun and sand destination. Typically, tourism demand behavior patterns are explained by economic and social conditions at an aggregate level (Seetanah, 2011). However, the heterogeneity of tourism demand also requires an analysis at the individual level. One of the starting points in order to assess the formation of tourist preferences relies on depicted tourists' motivations.

As argued by Huang and Hsu (2009), tourist motivations are a multidimensional construct critical to explain a tourist's choice. These motivations are, however, dynamic. Moreover, Chen, Mak and Mckercher (2011) in accordance with Pearce and Caltabiano (1983) and Pearce and Lee (2005), posited that tourists accumulate travel experience by visiting a variety of destinations during their life span which justifies preference switching points. Thus, motivations are the quest to underline what, how and why tourists decide on a particular destination. Hence, tourists' motivations should be an important focus of tourism demand research. Previous research reinforces the fact that motivations should be different from tourist to tourist and felt with different intensity levels (Yoon and Uysal, 2005). However, other streams of research show that motivations are of paramount importance in positioning destinations (Seddighi and Theocharous, 2002), and that motivations are dynamic (Crompton and Mckay, 1997). Following the main stream of present research, and according to Pearce (1988: 290), "preferences are more specific than motivations, and are revealed by where travelers go and what travelers do". Indeed preferences are based on destination attributes, which can be viewed as cognitive motivations (Decrop, 1999). Yang, Lin, and Han (2010) explain the dynamics of tourism demand through tourists' preferences, in particular at the level of cognitive/destination attributes which vary from country to country. Hence, this paper focuses on cognitive motivations that may be assumed as tourist preferences.

The present paper fills an important gap in the literature by exploring the dynamic preferences of tourism demand, mainly concerning its stability or varying patterns over time.

A further contribution of this paper lies in the adoption of non-linear probabilistic methods, such as ordered probit models, to model tourism demand. These models outperform simpler models in terms of explanatory ability, though not necessarily in terms of forecast accuracy (Calantone, Bendetto, and Bojanic, 1988). The use of ordered probit models allows for several insights that other methods cannot provide, particularly when the variables are categorical in nature as is the case in this study (Hoffman and Low, 1981). As these authors stated, "this approach allows the identification of significant factors, to measure the relative importance of a number of factors and to estimate the probability of certain behavior" (1981: 38). The ordered probit model is considered to be the most suitable model when the dependent variable is discrete, multiple and ranked. In the case of this study, the dependent variable takes five values, which are represented on a Likert scale in order to measure the importance of each preference. Data was collected based on a self-administrated questionnaire applied to international tourists upon their departure from Faro airport (Correia and Pimpão, 2012). Hence, this paper ranks international tourists preferences based on past behavior, travel companions, overall satisfaction, return intention and socio-demographic variables.

The rest of the paper is organized as follows: The next section discusses and summarizes the theoretical arguments based on travel preferences theories and the theory of discrete choice, grounded on Lancaster's (1966) consumer demand theory which is also followed by other authors (such as, *e.g.* Papatheodorou, 2001; Morley, 1992, and Rugg, 1973). The third section presents the methodology and the data set considered in the present research. Estimated results and interpretations are provided in the fourth section. The fifth section summarizes and presents the conclusions, limitations and perspectives for future research.

4.2 Literature review

4.2.1 From tourists motivations to preferences

A first attempt in order to assess the formation of preferences remains in the understanding of tourist's motivations construct. As stated by Goodall (1991: 175), "Personal preferences, like motivations, may be intrinsic, reflecting individual likes and dislikes, and extrinsic, or socially conditioned".

Since the second half of the 20th century, numerous studies have been devoted to the analysis of tourist motivations. Mainly based on Maslow's (1943) "Hierarchy of Needs", several studies were oriented towards the psycho-social or psychological approach (see *e.g.* Ryan, 1998, Crompton and McKay, 1997 and Pearce and Caltabiano, 1983), and only few studies have addressed this topic from a sociological perspective (see *e.g.* Dann, 1977, 1981 and Cohen, 1972). However, in order to understand the dynamic nature of tourist motivations it is important to analyze how motivations change over time (see *e.g.* Law, Rong, Vu, Li, and Lee, 2011; Huang and Hsu, 2009 and Pearce and Lee, 2005).

Motivations may be understood as the strength to carry out a specific action and contain results of situation-person interactions (Gnoth, 1997). From a general perspective, every human being has needs that will give rise to a certain behavior to accomplish and satisfy those needs. These needs are structurally ranked according to the priorities of each individual. Nevertheless, the importance of defining motivations is essential for the understanding of the basics of this important construct which explains part of human behavior, as well as tourist behavior.

In order to explain the factors that predispose a person to travel and those that attract a tourist to a given destination Dann (1977; 1981) introduces the Pull and Push paradigm, which has been widely applied in different contexts and for different regions (Correia, Kozak , and Ferradeira, 2013; Phau, Lee, and Quintal, 2013; Yousefi and Marzuki, 2012; Prayag and Ryan, 2011 and Kozak, 2002).

Dann (1977, 1981) stated that pull factors are related to specific attractions of the destination which induce the tourist to choose that destination. According to Yoon and

Uysal (2005), pull motivations are related to external aspects, *i.e.*, cognitive issues. In accordance with Hsu *et al.* (2009) personal preferences are extrinsic or cognitive motivations. Tran and Ralston (2006: 428) posited that "tourist preference is thus the act of selecting from among a set of choices as influenced by one's motivations". Pearce (1988) noted that preferences are more specific than motivations, and are expressed by tourists' destination choice as well as through the activities they practice. Hsu *et al.* (2009) highlighted Decrop's (1999) notion of preference, which is a special case of cognitive motivations where product alternatives are compared and from which one is chosen over others. Previous outcomes affect the creation of typical consumption patterns of tourism products based on preferences. The authors also highlighted the fact that "the preference analysis (…) is able to relate motivational factors to tourists' preference ratings of destination and to understand what factors are driving preferences" (Hsu *et al.*, 2009: 291).

There have been several studies on the preferences of tourists. Hsu *et al.* (2009) used a 4-level AHP model in order to identify the factors that influence tourists' destination choices and at the same time evaluated the preferences of Taiwanese tourists. Another preference analysis was conducted by Suh and MacAvoy (2005), who adopted a conjoint analysis in order to describe and forecast the choice behavior of visitors to Seoul, Korea. Hence, preferences and motivations are treated as an undistinguishable constructs, in what concerns cognitive motivations.

4.2.2 Choice behavior and tourist preferences

As suggested by Goodall (1988) there are three main predictors that directly influence preferences concerning holiday choice, namely, desires, motivation and image. As the author argues, "preferences serves as an intermediary step between motives and behavior" (1988: 428). Furthermore this decision contains an individual evaluation process of the attributes from the available choices (*e.g.* attributes of the destination). Nevertheless, in order to study individuals' behavior in terms of their decision-making process, one of the frequently quoted theories is the Discrete Choice Theory. This theory assumes the existence of non-observable preferences and the existence of an utility function. It considers individuals' choice behavior as a probabilistic process, which means that for modelling purposes it incorporates a certain degree of uncertainty.

By suggesting a model that breaks away from the traditional approach to consumer theory, which states that goods are the direct objects of utility, Lancaster (1966) assumed that there are properties or characteristics of goods from which utility is derived. In other words, consumption is an activity where goods are viewed as a combination of all their properties or characteristics.

As part of the choice behavior, individuals interpret and evaluate several choice alternatives in order to choose the one that maximizes their utility. Moreover, that tourists rank their preferences according to their perceptions and these perceptions arise in the process of learning about the product, which are correlated with how the consumer receives and processes the acquired information (Correia and Pimpão, 2008; Yoon and Uysal's, 2005).

The economic analysis of tourism demand begins with the microeconomic formulation of a rational choice where the individual seeks to maximize his/her own utility combining a basket of products, subject to budget and time constraints (Rugg, 1973). In this line of thought, Morley (1994: 783) indicates that "the choice of a destination by potential tourists is intrinsically categorical, multinominal (many destinations are available), and unordered. Discrete choice theory provides an appropriate framework for data analysis at the level of individuals' evoked responses". In this sense, it is important to highlight that more specific filters of choices are exercised by decision makers' preferences (Goodall, 1991).

Papatheodorou (2001) highlights that the use of the traditional demand theory in tourism suffers from a number of serious drawbacks, given that it ignores specific particularities of tourism products. Intending to fill this gap, the author suggested applying the Lancasterian characteristics framework aligned with Rugg (1973) and Morley (1992). However, by suggesting a discrete choice model he made the assumption that vacationers travel only to the destination which is associated with the highest utility.

These models reveal the common idea that the basis of the tourists' decision-making process is a functional decision-making process that is influenced by a number of economic and non-economic factors. The present research looks to identify the dynamic

behavior of the preferences of international tourists over time, for which the assumptions of discrete choice theory will be helpful in order to understand what preferences present the highest utility over time.

4.3 Hypotheses on moderate determinants for tourist preferences for the choice of destination

International tourists who travelled to Algarve reveal dynamic preferences over time.
This statement is based on the moderator effect of non-economic factors on the preferences rank ordering over the years considered, based on which the following hypotheses are tested:

Hypothesis 1 (past behavior): Past behavior moderates preference *i* at time *t*. Past behavior at a destination is identified as one of the constructs of overall satisfaction (*e.g.* Baker and Crompton, 2000; Huang and Hsu, 2009). Past behavior at a destination has a large combined effect on preferences (Huang and Hsu, 2009).

Hypothesis 2 (travel companion): Travel companion plays a role on preference *i* at time *t* of the visit. Following the personality profiles suggested by Plog (1974), it is evident that those labelled as Dependables prefer to be surrounded by family and friends; whereas Ventures prefer to be alone.

Hypothesis 3 (overall satisfaction): Overall satisfaction moderates preference *i* at time *t.* Overall satisfaction depends on the instrumental performance of the destination, which includes the maintenance of attributes that individuals were previously informed of. As suggested by Yoon and Uysal (2005), the instrumental and expressive attributes related to one another produce overall satisfaction. Many studies have related overall satisfaction to specific aspects of the product or service (*e.g.* Garbarino and Johnson, 1999; Parasuraman, Zeithaml, and Berry, 1988; and Oliver, 1980). Insofar as tourist satisfaction is important for the success of destinations, this construct is an important variable because it influences the choice of destinations and the decision to return (Kozak and Rimmington, 2000).

Hypothesis 4 (previous behavioural intentions): Previous behavioural intentions moderates preference *i* at time *t.* Festinger (1954) stated that satisfaction in relation to the destination influences future behavior. Beerli and Martín (2004) established that sun and sand destinations with a good image have a high level of repeaters. Kozak (2001) demonstrated that overall satisfaction and the number of previous visits considerably influence the intention to return, especially in mature destinations. Kozak (2003) also concludes that destination attributes influence future behavioural intentions and satisfaction.

Hypothesis 5 (socio demographic variables): Socio demographic variables moderates preference *i* at time *t.* This is a traditional hypothesis of demand models on questionnaire data (Saayman and Saayman, 2009; Woodside and Lysonski, 1989; and Goodall, 1988). This hypothesis validates the socioeconomic characterization of the questionnaire respondents as well as account for heterogeneity.

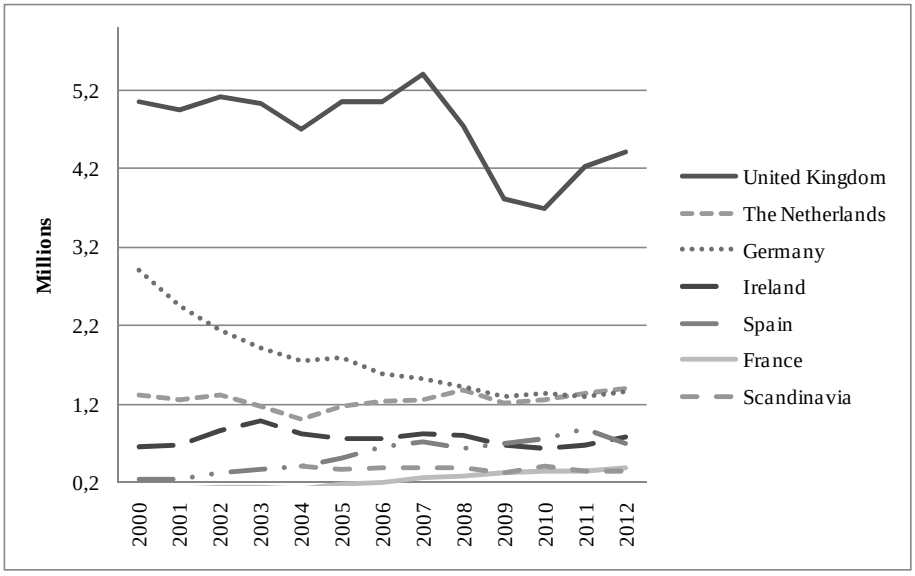
The hypotheses previously described were tested by the adoption of an ordered probit model which determines the probability of the most important preferences moderating the rank order of a set of attributes over time, when tourists choose the Algarve as a tourism destination.

4.4 Methodology

4.4.1 Research contextual setting

The economy of the Algarve is based on the tertiary sector, with a high weight on tourism. Concerning international tourism demand in the Algarve, the region received 10.578 million international overnights in 2012 which corresponded to 75% of total overnights in the region (Turismo de Portugal, IP., 2013). However, seven of the major international tourism source markets, such as the United Kingdom (UK); Germany (GER); the Netherlands (N), France (FR); Ireland (IR); Spain (SP) and Scandinavia (SCAN) have presented a decreasing trend since 2000 (see Figure 4.1 and also Serra, Correia and Rodrigues, 2014).

Figure 4.1 - International overnight stays in the Algarve region (2000-2012)



Source: Turismo de Portugal, IP (2013).

4.4.2 Study methods

Data were collected by means of a questionnaire applied from 2007 to 2010, which was presented to a stratified, random sample of international tourists at their departure in Faro airport (Correia and Pimpão, 2012). The definition of the sample was based on the number of international departures from Faro Airport from 2007 till 2010. Tourism in Algarve is mainly focused on leisure tourists, other segments such as visiting family and friends or business correspond to less than 11% (Correia and Pimpão, 2012). Mckercher and Guillet (2011) concluded that pleasure tourists are more motivated to travel than others. Hence, only international tourists visiting Algarve for the purpose of holiday/leisure were considered. With the permission of the Faro Airport authority, questionnaires were administrated in the airport departures lounge. Over the four years in which the administration of this questionnaire occurred the interviews were made randomly. Data collection was performed in each year under analysis but not necessarily in the same months because of the airlines schedules plans that vary considerably over the year, providing representativeness of nationalities but not of seasonality.

This research is focused on foreign markets that represent over 75% of total tourism demand in the Algarve region. The Spanish market, represents around 5% of total

tourism demand and the main transport used by 95% of tourists is the airplane. However, Spanish tourists, due the proximity to Algarve correspond almost to a domestic market since they visit the region more than four times a year. Table 4.1, summarize the general profile of respondents, sample size and response rates. Overall, 15542 persons were interviewed, corresponding to a total of 2636 questionnaires in 2007; 2187 in 2008; 5938 in 2009 and 4781 in 2010, covering participants from age groups ranging from the less than 20 to over 50 years of age. We also observed a wide variation in respondents' average of household monthly income, which ranged from below 2 000 Euro to over 8 000 Euro. A large portion of these respondents are married (more than 67.3%) and employed (62.3%).

Table 4.1 - Independent variables used in the ordered probit regression and general profile of respondents

Variable label	*%*	*Variable label*	*%*
Age		***Family income (monthly average)***	
up to 30	31.2	up to 2000 €	15.7
31-50	48.8	2001€ - 3500€	22.4
51 and over	20.0	3501€ - 5000€	40.8
Gender		5001€ - 8000€	10.9
Male	46.3	8001€ and over	10.2
Female	53.7	***Work Situation***	
Marital status		Employed	62.3
Married	67.3	Unemployed	22.0
Single	29.9	Not active	9.3
Divorced/Widowed	2.8	Student	5.0
Education		Retired	1.4
Elementary	22.5	***Travel companion***	
Secondary	75.9	Alone	9.6
Universitary	1.6	Spouse/Family	73.0
Nationality		Friends/Group	16.8
United Kingdom	29.8	Other	0.6
Germany	24.2	***Past visit behaviour***	46.6
The Netherlands	5.3	First time visit	53.4
Ireland	18.1	***Return intention***	
Scandinavia (Norway, Denmark, Sweden, Finland)	8.9	No	48.0
Others	13.7	yes	52.0
Overall Satisfaction		***Recommendation***	
very dissatisfied	2.1	No	55.5
dissatisfied	1.0	yes	44.5
very dissatisfied	80.5		
extremely satisfied	16.5		
N (number of respondents)	**15542**		

Source: Own elaboration.

To answer the questionnaire, tourists were invited to rate their agreement level using a Likert scale of 1-5, where 1 refers to not important and 5 to extremely important, in order to evaluate their preferences about 22 attributes of the Algarve in their decision to spend their vacations in the region ("When deciding to visit Algarve , how important were the following aspects?"). Table 4.2 presents the results of the 10 most preferable attributes which present statistically significant differences over the years. The most preferred attributes were the price, accommodation, cleanliness and hospitality, all with an average above 3.5. On the other hand, the less preferable was closeness to home and golf facilities.

Table 4.2 - Dependent variables used in the ordered probit regression

Variable name	Measurement Level	Mean	Rank	Value Label
Cleanliness	Ordinal	3.70	3	
Cultural and historical resources	Ordinal	3.10	6	1 not important
Information available	Ordinal	2.80	8	2 little important
Closeness to home	Ordinal	2.62	9	3 important
Accommodation	Ordinal	3.73	2	4 very important
Gastronomy	Ordinal	3.28	5	5 extremely important
Price	Ordinal	3.74	1	
Hospitality	Ordinal	3.62	4	
Sightseeing and excursions	Ordinal	2.89	7	
Golf facilities	Ordinal	1.90	10	

Source: Own elaboration.

4.4.3 Estimation Procedure

To investigate whether tourist preferences are heterogeneous over time, the Scheffé test was used to test for significant differences over the years (Table 4.3). The results confirmed the difference in tourist preferences over the years considered. Moreover, the tourist preferences considered in the model were those that showed more variability over time (*see* Table 4.3).

Table 4.3 - Scheffé test (multiple comparisons)

Dependent Variable (motivations/preferences)		Year (I)	Year (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Cleanliness	Scheffé	2009	2007	-.649*	.028	.000	-0.73	-0.57
			2008	-.630*	.030	.000	-0.72	-0.54
			2010	-.492*	.024	.000	-0.56	-0.43
		2010	2007	-.157*	.030	.000	-0.24	-0.07
			2008	-.138*	.031	.000	-0.23	-0.05
			2009	.492*	.024	.000	0.43	0.56
Cultural and historical resources	Scheffé	2009	2007	-.684*	.028	.000	-0.76	-0.61
			2008	-.472*	.029	.000	-0.55	-0.39
			2010	-.068*	.023	.034	-0.13	-0.00
		2010	2007	-.616*	.029	.000	-0.70	-0.54
			2008	-.405*	.030	.000	-0.49	-0.32
			2009	.068*	.023	.034	0.00	0.13
Information available	Scheffé	2009	2007	-.724*	.027	.000	-0.80	-0.65
			2008	-.557*	.029	.000	-0.64	-0.48
			2010	-.412*	.022	.000	-0.47	-0.35
		2010	2007	-.313*	.028	.000	-0.39	-0.24
			2008	-.145*	.029	.000	-0.23	-0.06
			2009	.412*	.022	.000	0.35	0.47
Closeness to home	Scheffé	2009	2007	-.938*	.029	.000	-1.02	-0.86
			2008	-.923*	.031	.000	-1.01	-0.84
			2010	-.242*	.024	.000	-0.31	-0.18
		2010	2007	-.696*	.030	.000	-0.78	-0.61
			2008	-.681*	.031	.000	-0.77	-0.59
			2009	.242*	.024	.000	0.18	0.31
Accommodation	Scheffé	2009	2007	-.624*	.028	.000	-0.70	-0.50
			2008	-.592*	.030	.000	-0.68	-0.51
			2010	-.409*	.023	.000	-0.47	-0.34
		2010	2007	-.215*	.029	.000	-0.30	-0.13

			2008	-.183*	.031	.000	-0.27	-0.10
			2009	.409*	.023	.000	0.34	0.47
Gastronomy	Scheffé	2009	2007	-.416*	.029	.000	-0.50	-0.34
			2008	-.404*	.031	.000	-0.49	-0.32
			2010	-.070*	.023	.034	-0.14	-0.00
		2010	2007	-.346*	.030	.000	-0.43	-0.26
			2008	-.333*	.032	.000	-0.42	-0.24
			2009	.070*	.024	.034	0.00	0.14
Price	Scheffé	2009	2007	-.190*	.027	.000	-0.27	-0.12
			2008	-.389*	.029	.000	-0.47	-0.31
			2010	-.269*	.022	.000	-0.33	-0.21
		2010	2007	.079*	.028	.047	0.00	0.16
			2008	-.120*	.030	.000	-0.20	-0.04
			2009	.269*	.022	.000	0.21	0.33
Hospitality	Scheffé	2009	2007	-.512*	.027	.000	-0.59	-0.44
			2008	-.467*	.029	.000	-0.55	-0.39
			2010	-.300*	.023	.000	-0.36	-0.24
		2010	2007	-.212*	.028	.000	-0.29	-0.13
			2008	-.166*	.030	.000	-0.25	-0.08
			2009	.300*	.023	.000	0.24	0.36
Sightseeing and Excursions	Scheffé	2009	2007	-.447*	.028	.000	-0.53	-0.37
			2008	-.427*	.030	.000	-0.51	-0.34
			2010	-.155*	.023	.000	-0.22	-0.09
		2010	2007	-.292*	.029	.000	-0.37	-0.21
			2008	-.271*	.031	.000	-0.36	-0.18
			2009	.155*	.023	.000	0.09	0.22
Golf facilities	Scheffé	2009	2007	-.079*	.028	.044	-0.16	-0.00
			2008	-.437*	.030	.000	-0.52	-0.35
			2010	.023*	.023	.793	-0.04	0.09
		2010	2007	-.102*	.029	.005	-0.18	-0.02
			2008	-.461*	.031	.000	-0.55	-0.38
			2009	-.023*	.024	.793	-0.08	0.04

Source: Own elaboration.

For the analysis of the moderation effect of tourist preferences over time and in order to test hypotheses 1-5, the estimation of an ordered probit model is considered.

The dependent variable, P, is discrete, multiple and ranked and takes values 1, 2, 3, 4 or 5. Taking into consideration a five-point Likert scale, which is often used in order to capture the degree of importance for tourists concerning the attributes of the destination, it can be argued that an individual's preferences is determined by the expression:

$$P_{it}^{*} = \beta pb_{t-1} + \ \beta tc_t + \beta osatis_{t-1} + \ \beta ri_t + \beta rec_t + \ \beta sd_t + \ \varepsilon_t \quad (8)$$

Where P^{*}_{it} represents the latent variable of preference for attribute *i* at time *t*, declared by the tourist; $pb_{t\text{-}1}$ represents the individual's last year behavior at the destination; tc_t represents the individual's travel companion at time *t*; $osatis_{t-1}$ represents the individual's overall satisfaction with the destination at time *t-1*; ri_t represents the individual's return intention at time t; rec_t represents the recommendation intention at time *t*, and sd_t represents the individual's socio demographic characteristics at time *t*.

Moreover, it is assumed that:

$P = 1 \ if \ P_1 < K_1,$

$P = 2 \ if \ K_1 \leq P_2 < K_2,$

$P = 3 \ if \ K_2 \leq P_3 < K_3,$

$P = 4 \ if \ K_3 \leq P_4 < K_4,$

$P = 5 \ if \ K_4 \leq P_5 < K_5,$

where K_1, K_2, K_3, K_4 and K_5 are the cut-off points and $K_1 < K_2 < K_3 < K_4 < K_5$.

Hence, as an example, the conditional probability for individual i is,

$$\Pr(P = i) = Pr(K_{i-1} < P^{*} \leq K_i) = Pr\,(K_{i-1} < X'\beta + \varepsilon_i \leq K_i\,)$$

$$= Pr(X'\beta + \varepsilon_i \leq K_i) - Pr(X'\beta + \varepsilon_i \leq K_{i-1})$$

$$= Pr(\varepsilon_i \leq K_i - X'\beta) - (\varepsilon_i \leq K_{i-1} - X'\beta)$$

$$= F(K_i - X'\beta) - F(K_{i-1} - X'\beta) \quad (8.1)$$

where *F* is the cumulative distribution function of the ε_i. For the ordered probit model the residual ε is standard normal distributed ($N(0,1)$) and *F* is the standard normal cumulative distribution function(Long and Freese, 2006).

The sign of the regression parameters β can be immediately interpreted as determining whether or not the latent variable P^{*} increases with the regressor (Cameron and Trivedi, 2005; 2010). Maximum likelihood estimation was adopted in order to obtain the results. According to Long and Freese (2006), the discrete change is the change in the predicted probability for a change in x_k from the starting value x_S to the end value x_E, i.e.,

$$\frac{\Delta \Pr(P = m \mid C)}{\Delta_{xk}} = \Pr(P_i = m \mid X, x_k = x_E) - \Pr(P_i = m \mid X, x_k = x_s) \quad (9)$$

where $\Pr(P_i = m \mid X, x_k = x_k)$ is the probability that $P_i = m$, conditional on a specific value for x_k. The change is interpreted as indicating that when x_k changes form x_S to x_E, the predicted outcome probability m changes by $\Delta \Pr(P_i = m|X)/\ \Delta x_k$, holding all other variables at X.

For the independent variables that are not binary, the discrete change can be interpreted for a unit change centered on the mean. The value of the marginal change depends on the levels of all explanatory variables. Marginal effects[i] were estimated for only one outcome category, where the category chosen was extremely important, $P_i = P_5$.

Explanatory variables were selected to test the hypotheses previously put forward in this research. Thus, the ordered probit model explains the level of preference that an individual may have at a certain time based on socio demographic, travel companion, overall satisfaction, behavioural intention, and past behavior towards the Algarve.

4.5 Findings and discussion

Following the results presented in Tables 4.4; 4.5, the direction and significance of results of the ordered probit model is described. As expressed at the end of Table 4.4, for each preference a Likelihood Ratio (LR) test is performed. According to Long and Freese (2006) each result represents that at least one of the predictors' regression coefficients is not equal to zero in the model. Concerning the interpretation of McFadden's pseudo R-squared, which compares a model with just the intercept to a model with all parameters, care needs to be taken as it does not have the same meaning as the R-squared from an OLS regression.

Table 4.4 - Ordered probit regression (years 2007 - 2010)

	Cleanliness	*Cultural*	*Information*	*Closeness to home*	*Accommodation*	*Gastronomy*	*Price*	*Hospitality*	*Sightseeing*	*Golf*
Nationality										
UK07	*ns*	.578 (*)	.305 (*)	.465 (*)	.168 (*)	.355 (*)	*ns*	.142 (*)	.243 (*)	-.144 (*)
UK08	-.099 (*)	.451(*)	.147 (*)	.543 (*)	*ns*	.291 (*)	.110 (*)	.062 (***)	.312 (*)	.518 (*)
UK09	-.538 (*)	*ns*	-.394 (*)	-.238 (*)	-.417 (*)	*ns*	-.188 (*)	-.330 (*)	-.084 (*)	*ns*
UK10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
GER07	-.139 (**)	.533(*)	.276 (*)	.428 (*)	.109 (***)	.261 (*)	*ns*	*ns*	.200 (*)	-.143 (**)
GER08	-.171(**)	.418 (*)	.158 (**)	.542 (*)	-.123 (***)	.179 (*)	*ns*	*ns*	.304 (*)	.525 (*)
GER09	-.485 (*)	-.069 (*)	-.429 (*)	-.254 (*)	-.417 (***)	-.070 (*)	-.241 (*)	-.322 (*)	-.168 (*)	*ns*
GER10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NE07	*ns*	.779 (*)	.538 (*)	.576 (*)	*ns*	.302 (*)	*ns*	.371 (*)	.417 (*)	*ns*
NE08	-.238 (*)	.339 (*)	.151(**)	.512 (*)	*ns*	.260 (*)	*ns*	*ns*	.166 (**)	.512 (*)
NE09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NE10	-.238 (*)	*ns*	-.099 (**)	-.136 (*)	-.098 (**)		*ns*	-.102 (**)	.089 (***)	-.129 (**)
IR07	*ns*	.579 (*)	.203 (*)	.374 (*)	.228 (*)	.381 (*)	*ns*	*ns*	.157 (**)	-.194 (**)
IR08	-.179 (**)	.414 (*)	.195 (*)	.535(*)	*ns*	.232 (*)	.160 (**)	*ns*	.300 (*)	.497 (*)
IR09	-.639 (*)	*ns*	-.353 (*)	-.149 (*)	-.540 (*)	*ns*	-.199 (*)	-.322 (*)	.108 (*)	.089 (**)
IR10	-.120 (*)	.189 (*)	*ns*	*ns*	-.147 (*)	*ns*	.091 (*)	-.073 (**)	*ns*	.069 (***)
SCAN07	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	.631 (**)
SCAN08	-.370 (*)	.319 (*)	*ns*	.559 (*)	*ns*	.337 (*)	.067 (**)	*ns*	.325 (*)	.440 (*)
SCAN09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
SCAN10	-.086 (**)	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	-.068 (**)
Other07	*ns*	.544 (*)	.250 (**)	.469 (*)	*ns*	.314 (*)	*ns*	*ns*	*ns*	*ns*
Other08	-.198(**)	.360 (*)	*ns*	.549 (*)	*ns*	.292 (*)	*ns*	*ns*	.357 (*)	.525 (*)
Other09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Other10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Past Behaviour										
1 - No	.035 (***)	-.108(*)	-.112 (*)	.059 (*)	.038 (**)	.047 (*)	-.032 (***)	*ns*	-.147 (*)	.149 (*)
2- Yes	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

Table 4.4 - Ordered probit regression (years 2007 - 2010) (cont.)

	Cleanliness	*Cultural*	*Information*	*Closeness to home*	*Accommodation*	*Gastronomy*	*Price*	*Hospitality*	*Sightseeing*	*Golf*
Travel Companion										
1 - Alone	-.092 (*)	.093(*)	*ns*	*ns*	-.154 (*)	*ns*	-.144 (*)	*ns*	-.081 (*)	-.066 (***)
2 - Family/spouse	.173 (*)	*ns*	.061 (*)	*ns*	.123 (*)	.062 (*)	*ns*	*ns*	*ns*	-.045 (***)
3 - Friends/Group	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Return intention										
1 - No	.050 (*)	.060 (*)	.053 (*)	*ns*	*ns*	*ns*	.054 (*)	.054 (*)	*ns*	.142 (*)
2-Yes	*ns*	*ns*	*ns*	-.096 (*)		-.082 (*)	*ns*	*ns*	*ns*	*ns*
Recommend										
1 - No	.080 (*)	*ns*	*ns*	*ns*	.098 (*)	.059 (*)	*ns*	.044(**)	.033 (***)	-.046 (**)
2-Yes	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Gender										
1 - female	.168 (*)	.064 (*)	.068 (*)	*ns*	.129 (*)	.032 (**)	.099 (*)	.084 (*)	.089 (*)	-.074 (*)
2 - male	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Age										
1 - < 30	-.083 (*)	-.117 (*)	*ns*	*ns*	-.107 (*)	-.079 (*)	*ns*	*ns*	.065 (*)	-.092 (*)
2 - 31 - 50	*ns*	-.074 (*)	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	-.120 (*)
3 - > 51	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Marrital status										
1 - single	-.066 (*)	.041 (***)	*ns*	*ns*	-.061 (**)	-.081 (*)	-.053 (*)	*ns*	*ns*	-.078 (*)
2 - divorced/widowed	*ns*	.123 (**)	*ns*	*ns*	-.136 (**)	*ns*	*ns*	*ns*	*ns*	*ns*
3 - married/living together	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Income										
1 - < 3500€	-.045 (*)	.106 (*)	.102 (*)	*ns*	-.088 (*)	-.124 (*)	.207 (*)	.062 (**)	.132 (*)	-.264 (*)
2 - 3501€ - 5000€	*ns*	.117 (*)	.073 (*)	*ns*	-.057 (**)	-.092 (*)	.121 (*)	.061 (**)	.114 (*)	-.143 (*)
3 - > 5001€	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

Table 4.4 - Ordered probit regression (years 2007 - 2010) (cont)

	Cleanliness	*Cultural*	*Information*	*Closeness to home*	*Accommodation*	*Gastronomy*	*Price*	*Hospitality*	*Sightseeing*	*Golf*
Work Situation										
1 - Unemployment	-.064 (**)	*ns*	*ns*	.087 (**)	-.075 (**)	-.065 (***)	-.071 (*)	*ns*	.077 (**)	.105 (*)
2 - Not active	-.241 (*)	-.153 (*)	-.125 (*)	-.235 (*)	-.172 (*)	-.235 (*)	-.060 (**)	-.241 (*)	-.133 (*)	-.153 (*)
3 - Retired	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
4 - Student	.074 (***)	0727465 (***	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	.082 (**)	.119 (*)
5 - Employed	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Education										
1 - Elementary	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
2 - Secundary	*ns*	.049 (**)	-.073 (*)	-.054 (*)	*ns*	.046 (**)	*ns*	-.054 (*)	*ns*	*ns*
3 - Universitary	*ns*	*ns*	*ns*	-.130 (***)	-.149 (**)	*ns*	*ns*	*ns*	*ns*	-.250 (*)
Overall satisfaction										
1 - very dissatisfied	*ns*	*ns*	*ns*	*ns*	-.335 (*)	-.103 (***)	-.246 (*)	-.178 (*)	*ns*	*ns*
2 - dissatisfied	*ns*	*ns*	*ns*	*ns*	-.228 (**)	*ns*	-.305 (*)	-.379 (*)	*ns*	*ns*
4 - very satisfied	*ns*	-.070 (*)	*ns*	-.071 (*)	-.300 (*)	-.164 (*)	-.183 (*)	-.298 (*)	-.055 (**)	*ns*
5 - extremely satisfied	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Number of obs =	15542	15542	15542	15542	15542	15542	15542	15542	15542	15542
LR chi2 (*df*) =	1231.27 (25)	988.04 (27)	1052.70 (21)	1706.28 (22)	1248.31 (25)	745.50 (26)	404.09 (19)	691.17 (18)	568.12 (25)	1081.59 (29)
Prob > chi2 =	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2 =	0.0291	0.0209	0.0223	0.0353	0.0304	0.0155	0.0099	0.0168	0.0118	0.0296

*Notes for table 4.4 - significantly at 1% level | ** significantly at 5% level | *** significantly at 10% level | ns - not significant |*

Source: Own elaboration.

Table 4.5 - Marginal effects: percentage change for the order probit regression model

	Cleanliness	*Cultural*	*Information*	*Closeness to home*	*Accommodation*	*Gastronomy*	*Price*	*Hospitality*	*Sightseeing*	*Golf*
Nationality										
UK07		.133	.052	.080	.056	.097		.042	.048	-.019
UK08	-.033	.104	.025	.094		.080	.036	.018	.062	.071
UK09	-.181		-.067	-.041	-.139		-.062	-.098	-.016	
UK10										
GER07	-.047	.122	.047	.074	.036	.072			.039	-.019
GER08	-.057	.096	.027	.094	-.041	.049			.060	.072
GER09	-.163	-.015	-.073	-.044	-.138	-.019	-.079	-.096	-.033	
GER10										
NE07		.179	.092	.100		.083		.110	.083	
NE08	-.080	.078	.025	.089		.071			.033	.070
NE09										
NE10	-.051		-.016	-.023	-.032			-.030	.017	-.017
IR07		.133	.034	.064	.076	.105			.031	-.026
IR08	-.060	.095	.033	.093		.064	.052		.059	.068
IR09	-.215		-.060	-.026	-.179		-.065	-.096	-.021	.012
IR10	-.040	.043			-.049		.030	-.021		.009
SCAN07										.086
SCAN08	-.124	.073		.097		.092	.022		.064	.060
SCAN09										
SCAN10	-.029									-.009
Other07		.125	.043	.081		.086				
Other08	-.067	.083		.095		.080			.071	.072
Other09										
Other10										
Past Behaviour										
1 - No	.011	-.025	-.019	.010	.012	.013	-.010		-.029	.020
Travel Companion										
1 - Alone	-.031	.021			-.051		-.047		-.016	-.009
2 - Family/spouse	.058		.010		.041	.017				-.006

Table 4.5 - Marginal effects: percentage change for the order probit regression model (cont.)

	Cleanliness	*Cultural*	*Information*	*Closeness to home*	*Accommodation*	*Gastronomy*	*Price*	*Hospitality*	*Sightseeing*	*Golf*
Return intention										
1 - No	.017	.013	.009				.018	.016		.019
2-Yes				-.016		-.022				
Recommend										
1 - No	.027				.032	.016		.013	.006	-.006
Gender										
1 - female	.056	.014	.011		.043	.008	.032	.025	.017	-.010
Age										
1 - < 30	-.028	-.026			-.035	-.022			.013	-.012
2 - 31 - 50		-.017								-.016
Marrital status										
1 - single	-.022	.009			-.020	-.022	-.017			-.010
2 - divorced/widowed		.028			-.045					
Income										
1 - < 3500€	-.015	.024	.017		-.029	-.034	.068	.018	.026	-.036
2 - 3501€ - 5000€		.027	.012		-.019	-.025	.040	.018	.022	-.019
Work Situation										
1 - Unemployment	-.021			.015	-.025	-.017	-.023		.015	.014
2 - Not active	-.081	-.035	-.021	-.040	-.057	-.064	-.020	-.072	-.026	-.021
4 - Student	.025	.016							.016	.016
Education										
2 - Secundary		.011	-.012	-.009		.012		-.016		
3 - Universitary				-.022	-.049					-.034
Overall satisfaction										
1 - very dissatisfied					-.111	-.028	-.081	-.053		
2 - dissatisfied					-.076		-.100	-.113		
4 - very satisfied		-.016		-.012	-.100	-.045	-.060	-.089	-.011	

Source: Own elaboration.

Hypothesis 1 is not rejected, with mixed results. The mixed results varying between positive and negative moderators highlighted that not all preferences are valued in the same way. Cleanliness, closeness to home, accommodation, gastronomy and golf are moderated by first time tourists. Information, culture, price and sightseeing are likely to be negatively moderated by first time tourists. The most surprising result is that repeat behavior does not moderate any preferences, suggesting that repeat tourists are well

aware of what to expect in Algarve and thus the regional attributes are not relevant for their decisions to comeback. This result is in accordance with Correia, Pimpão and Crouch (2008) who suggest that repeat tourists in Algarve are sort of "hostages" of the region. Results are also in line with the final remarks of Oppermann (2000), who suggested that the choice is affected by destination loyalty. These results are reinforced by marginal effects (*me*). For Cleanliness *me*=0.011, which indicates that an increase of 0.011 for first time visitors, suggest that they are more likely to report cleanliness as extremely important. Concerning closeness to home (*me*=0.01) first time visitors report this as extremely important whereas for accommodations *me*=0.012, for gastronomy *me*=0.013, and for golf *me*=0.02.

Cleanliness, information available, accommodation and gastronomy are positively influenced by tourists travelling with families. Considering the marginal effects, an increase of 0.058 for family tourists, suggests that they are more likely to report accommodation as extremely important. Concerning the information available attribute, an increase of 0.01of this attribute suggest that these visitors are more likely to consider it as extremely important, as well as, accommodation (0.041) and gastronomy (0.017). These results confirm the dependable profile of international tourists in the Algarve, stated by Plog (1974). Thus, considering the above results *hypothesis 2 is not rejected*.

Cultural and historical resources, closeness to home, accommodation, gastronomy, price, hospitality and sightseeing and excursions are negatively influenced by tourists that were very satisfied with the destination. This result suggests that the more satisfied the tourist is the less likely it is that he/she assumes to prefer those attributes. This may indicate that overall satisfaction of tourists is not related to the good performance of Algarve on cultural aspects, neither to some facilities' attributes. Indeed, through marginal effects it is possible to conclude that a decrease of 0.016 for tourists that were very satisfied with their past visit, are less likely to consider cultural and historical resources as extremely important; a decrease of 0.012 suggests that they are less likely to consider closeness to home as extremely important; a decrease of 0.10 suggests that they are less likely to consider accommodation as extremely important; a decrease of 0.045 evidence that they are less likely to consider gastronomy as extremely important; a decrease of 0.06 indicate that they are less likely to consider price as extremely important; a decrease of 0.089 suggests that they are less likely to consider hospitality

extremely important and a decrease of 0.011 evidence that they are less likely to considerer sightseeing as extremely important. In accordance with previous results, some conclusions could be highlighted. Following Pizam, Neumann and Reichel (1978) quoted by Correia, Kozak and Ferradeira (2013) overall satisfaction is the cumulative experience weighted by all single experiences. The results suggest that based on previous knowledge of the destination, tourists tend to moderate negatively those traditional attributes for their primary needs in the Algarve, such as, for instance, closeness to home, accommodation, gastronomy, price and hospitality. Considering the above results *hypothesis 3 is not rejected*.

Previous behavioural intentions moderate tourist motivations/preferences over the years, although evidencing some mix-effects. Return intention and recommendation were included in the model as expression of behavioural intentions. Closeness to home and gastronomy are negatively moderated by tourists with return intentions. Instead of that, cleanliness, cultural and historical resources, available information, price, hospitality and golf facilities are positively influenced by those tourists who do not intent to return to the Algarve. A decrease of 0.016 for the tourists who decide to return to the Algarve, suggests that they are less likely to consider closeness to home as extremely important. The same negative effect is considered for gastronomy (0.022). These results meet Chen and Gursoy (2001) conclusions concerning destination loyalty based on preferences. The authors highlighted that some customer loyalty requires the "necessity to develop a mutually beneficial relationship between the business and customers" (p. 80). In the case of the Algarve, mainly in the case of gastronomy preferences, the negative moderation of this preference could be interpreted as a non preference for future visits.
Cleanliness, accommodation, gastronomy, hospitality and sightseeing are positively moderated by tourists without intention of recommending the Algarve as a destination An analysis of the marginal effects indicates that among those tourists who do not intend to recommend the Algarve, an increase of 0.027 for tourists who do not intend to recommend the Algarve, suggest that they are more likely to report cleanliness as extremely important. The same positive effect is evidenced for accommodation (0.032); gastronomy (0.016); hospitality (0.013) and sightseeing and excursions (0.06). Thus, *hypothesis 4* is not rejected.

Socio-demographic characteristics present different moderator effects on tourist motivations. These mix-effects vary according to tourists' nationality, gender, age, marital status, income, work situation and education. Considering the analysis based on nationalities, it seems that all markets present different value patterns over the years. British tourists are the most important international market for the Algarve. As mentioned above, this market evidences a considerable knowledge and loyalty degree in this region. According to the regression results, apart from the basic attributes (*i.e.*, accommodation), several attributes, such as cultural and historical resources, sightseeing and excursions and golf facilities, seem to positively moderate this market's preferences over the years of 2007 and 2008. This result is reinforced by the marginal effects obtained: cultural and historical resources with 0.104 in 2008; sightseeing with 0.062 and golf with 0.071. However, in 2009 these attributes are negatively moderated by British tourists. Considering the marginal effects, 0.181 are less likely to consider cleanliness as extremely important; 0.139 are less likely to consider accommodation as extremely important and 0.098 are less likely to consider hospitality as extremely important. German tourists tend to reveal the same moderated pattern as British tourists concerning their choice behavior. Cultural and historical resources, available information, closeness to home, gastronomy and sightseeing and excursions, between the years of 2007 to 2008 are positively moderate by Dutch and Irish tourists.

Cultural and historical resources, closeness to home, gastronomy, price, sightseeing and excursions and golf facilities are positively rated by Scandinavian tourists in 2008. According to the marginal effects, an increase of 0.073 for Scandinavian tourists in 2008, suggests that they are more likely to report cultural and historical resources as extremely important. The same positive effect is evidenced for closeness to home (0.097); gastronomy (0.092); price (0.022); sightseeing and excursions (0.064) and finally golf facilities (0.06). Almost all aspects are positively influenced over the years by females, except golf facilities. Considering the results for the marginal effects, for instance, an increase of 0.056 for females' tourists suggests that they are more likely to report cleanliness as extremely important; an increase of 0.043 they are more likely to report accommodation as extremely important and an increase of 0.032 they are more likely to report price as extremely important, suggesting that logistic decisions are still a woman decision.

Cultural and historical resources and golf facilities are negatively influenced by middle-age tourists. Sightseeing and excursions is the single attribute that seems to be preferred by younger tourists. An analysis of marginal effects indicates that an increase of 0.013for younger tourists evidenced that they are more likely to report sightseeing and excursions as extremely important. The findings are also partially in accordance with Correia *et al.* (2008), since younger tourists positively moderate sightseeing and excursions. The authors evidenced that younger tourists are more apt to be novelty seekers and at the same time, less sensitive to risk, than older tourists in Algarve.

Tourists with income less than 3500€ and between 3501€ and 5000€, seem to present a mix effect concerning their preferences. The mixed results varying between positive and negative moderators highlighted that not all levels of income exert the same influence on preferences. Cultural and historical resources, information, price, hospitality and sightseeing and excursions are positively moderated by tourists with monthly incomes between 3501€-5000€ (this result is reinforced by the marginal effects: cultural and historical resources with 0.027; information with0.012; price with 0.04; hospitality with 0.018 and sightseeing and excursions with 0.022). Tourists with a monthly income higher than 5001€ do not moderate at all any of the motivations outlined. According to the theoretical and empirical context *hypothesis 5 is not rejected*.

4.6 Conclusions

The purpose of this research was to analyze how tourists' preferences for Algarve as a tourism destination are formed over time. This study featured contributions concerning the formation of tourist preferences based on cognitive motivations that are embodied by destination attributes. Preferences are dynamic and heterogeneous, which are influenced by socio-demographic characteristics, behavioural intentions, past behavior and travel companion. In this sense, this research also contributes for a better understanding of the preference notion stated by Pearce (1988). The dynamic and heterogeneous characteristics of tourist preferences stated by, among others, Crompton and Mckay (1997); Goodall (1991); and Pearce and Caltabiano (1983) was also explored. At the same time, this study is empirically in line with results achieved in other studies (e.g. Correia *et al.*, 2008) concerning tourists in Algarve.

A first analysis identifies 10 preferences that correspond to the ones which exhibit more variability over the time period considered (2007-2010). These are: cleanliness; cultural and historical resources; available information; closeness to home; accommodation; gastronomy; price; hospitality; sightseeing and excursions; and golf facilities. Several hypotheses were proposed with the purpose of testing the moderation effect of socio-demographics, behavioural intentions and overall satisfaction on the formation of tourist preferences. Based on ordered-probit regressions it was possible to explore the preference dynamics of international tourism demand in the Algarve region. Suggesting that repeat tourists are "hostages" of this region and that they return because of overall satisfaction rather than any particular motive. On the other hand, cleanliness is preferred by first time visitors and by tourists travelling with their families, mostly by females and students. Culture is valued by single or divorced tourists travelling alone who seems to look for different forms of leisure, average income tourists, students or tourists with a standard level of education also value culture. In what concern nationalities culture drove decisions of British, German and Dutch tourists in 2007 and 2008, but not in subsequent years. Irish tourists valued culture in 2007, 2008 and 2010, whereas Scandinavian tourists only valued culture in 2007. This suggests that the effort to promote culture among these tourists should be improved. Information is a preference of females, and of all nationals even if this information tends to be less valued in 2009 and 2010. Closeness to home is positively moderated by British, German, Dutch and Scandinavian tourists in the early years (2007, 2008) and the least valuable in 2009, 2010. This may suggest that the euphoria of low cost flights tend to cease over the years. Accommodation is preferred in 2007 by British and Germans but not in subsequent years suggesting that the services offered should be improved. Accommodation is also more preferred by first time tourists travelling with their families. A surprising result is that the low—middle class tourists show a negative preference for accommodation, as well as young tourists, the ones with low or high satisfaction also tend to depreciated accommodation. This may suggested that accommodation is not a core product in Algarve, perhaps because of the price or because of the service. Gastronomy is preferred by families visiting the Algarve for the first time, also British, German and Irish tourists valued gastronomy in 2007, but not in the following years. The price and hospitality follow the same pattern of the one suggested for gastronomy. Sightseeing is preferred by British, German and Dutch tourists in 2007 and 2008; in 2010 Dutch tourists preferred sightseeing once again.

Average income tourists travelling to this region for the first time also preferred sightseeing, and golf showed the same pattern. Overall the results suggested that tourists in Algarve preferring these attributes are mostly middle average income tourists, travelling with their families, with an average level of education. Exceptions are culture which is a preference of single tourists. Further the steady decrease of preferences from 2008 to 2009 and 2010 suggests that tourism in Algarve is in a decline phase and that something should be done to catch new and emerging markets as well as to improve the attributes (accommodation, price, hospitality, culture and sightseeing and gastronomy) which are critical to capture and retain tourists. Further the negative sign in most traditional markets evidences a certain ceasing tendency in these markets that may be a matter of a repositioning strategy. In terms of managerial implications, these results may be useful for tourism management authorities in order to recover from the decreasing trends of these markets, by reengineering the tourism products of the Algarve. Another contribution is the predictive potential of a tourists' preferences index in order to analyze the behavior of international tourism markets in the Algarve.

Future studies concerning the heterogeneous pattern of tourist motivations by nationality are needed, in order to understand future trends of international markets in a cross country perspective. Thus, we suggest extending this line of research to other destinations. Indeed, future studies that introduce motives (push factors), are needed in order to understand the influence of intrinsic needs concerning the formation and rank order of tourist preferences.

Data collection performed over all years was not done in the same months, due to the airline schedule plans that vary considerably over the year. Thus, this fact is a limitation of the present study, since it does not enabled an analysis considering the seasonality effects.

Endnote

For more details on marginal effects in ordered response models see Cameron and Trivedi (2005: 543-544).

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CHAPTER 5

TOURIST SPENDING DYNAMICS IN ALGARVE
A CROSS-SECTIONAL ANALYSIS

(PAPER 4)

TOURIST SPENDING DYNAMICS IN ALGARVE
A CROSS-SECTIONAL ANALYSIS

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Abstract

This paper assesses the determinants of international tourists' spending in Algarve from 2007 to 2010. Tourist spending modelling is supported on microeconomic theory. Based on a sample of 15542 observations a cross-section model was estimated using Ordinary Least Squares. Results reveal that a combination of socio-demographic, behavioural and motivation variables explain spending patterns of international tourists in Algarve. Analysis of the data indicates that tourist motivations related to accommodation facilities, cultural and historical resources, gastronomy, hospitality, prices and sightseeing tours positively affect tourists' spending. Moreover, findings provide evidence that, across the years the most loyal markets in Algarve reveal changing patterns in their spending behaviour (e.g. United Kingdom, Germany and Ireland).

Tourist motivations reveal a dynamic pattern across years on tourist spending. In particular, positive shifts are visible on golf facilities motivations, which seem to be associate to repeat visitors with new motivations, as well as gastronomy, hospitality and their recommendation behaviour for travelling to Algarve. Accommodation also evidences a positive shift because its relation with increasing spending patterns of families and friends and groups across the years. In this vein prices and sightseeing tours appear to be associated to this effect. Destination management authorities should be aware of this spending behaviour of second generation sun and sand visitors. Further policy and managerial recommendations are discussed.

Keywords: Tourism demand; tourist spending; travel motivations; microeconomic analysis; multiple regression analysis, Algarve.

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5.1 Introduction

This paper analyses the determinants of international tourist spending in the Algarve, based on socio-demographic, behavioural variables of international tourism demand. The Algarve is located in southern Portugal and is one of the most renowned sun and sand destinations worldwide. Nowadays "destination marketers are trying to expand their market share by seeking travellers who will spend money, and not just time, on their tourism products" (Mok and Iverson 2000, 299).

A number of studies have analyzed the determinants of tourist expenditures (e.g. Cai, 1999; Cheung and Law, 2001; Di Matteo and Di Matteo, 1993; Kozak *et al*, 2008; Nicolau and Más, 2005; Pol *et al.*, 2006; Qiu and Zhang, 1995; Sun and Stynes, 2006; Zhou, 2000), in particular within the USA (Sainaghi, 2012). Concerning the business level, in the case of sun and sand destinations there are some researches that explore the determinants of tourist expenditures (e.g. Alegre *et al.*, 2011; Aguilló and Juaneda, 2000). The authors claim that due to the shifts in tourism motivations and travel patterns it is advisable to assess tourism demand by expenditures in order to depict tourists profitability. Alegre *et al.* (2011); Wang *et al.* (2006) argued that tourists expenditures may not be explained only by the socio-economic status of tourists. This paper fills a gap in the literature by analyzing determinants of tourist expenditure in order to measure the value added by different types of tourism motivations for a given destination (Algarve). Only few studies address how motivations may explain tourist expenditure levels (Alegre and Cladera, 2009; Alegre *et al.*, 2011; Boo and Jones, 2009; Kastenholtz *et al*, 1999; Laesser and Crouch, 2006; Swanson and Horridge, 2006).

This research aims to (1) estimate the determinants of international tourists' expenditures in the Algarve; (2) identify how motivations may lead to quite different expenditure patterns; (3) assess whether the determinants of tourist spending vary across years. Estimations are performed in a cross-section dimension to look for the characteristics that define different tourist consumption patterns according to socio-demographic and behavioural characteristics, taking the dynamic patterns of today's markets into consideration. Data were collected based on a self-administrated questionnaire survey applied to international tourists upon their departure in Faro airport (Correia and Pimpão, 2012). Hence, this paper looks to explain international tourist

spending in the Algarve based on motivations, past behaviour, travel companions, overall satisfaction, return intention and socio-demographic variables.

The results confirm that the Algarve maintains a dynamic pattern concerning tourist spending behaviour across the years. Thus, the findings shed some light on research concerning the relation between travel motivations and the amount of money spent during the trip, revealing that some motivations seem to generate more revenue for the destination than others (e.g. golf facilities, sightseeing and excursions, hospitality, price, cleanliness and accommodation facilities).

The paper is organized as follows: the next section discusses and summarizes the theoretical argument for the estimation of determinants of tourist expenditure and the theory of discrete choice, grounded in Lancaster's (1966) original work on consumer analysis-characteristics and followed by other authors (e.g. Papatheodorou, 2001; Morley, 1992; and Rugg, 1973). Several hypotheses are established and properly justified with literature that explored and analyzed the determinants of tourist expenditure. The third section presents the methodology and the data set considered in the present research. Estimated results are provided in the fourth section. The fifth section summarizes and presents the conclusions, limitations and perspectives for future research.

5.2 Literature review

5.2.1 Determinants of tourist expenditures

Tourism demand refers to consumers' willingness to buy different amounts of a tourism product at different prices during one period of time (Dwyer, Forsyth and Dwyer, 2010). This willingness is constrained by the availability of time and money to spend on holidays. Tourism is a complex decision wherein several determinants contribute to explains tourism demand, whether it be measured by means of overnight stays or expenditures. Researches that focus on that stream of analysis are part of a broader field of study which is inside of tourism demand modeling and forecasting research (Sainaghi, 2012). Tourism demand is frequently measured by the number of arrivals and the level of tourist expenditures, in per capita terms (Song *et al.*, 2012). According to Song and Li (2008) although tourist arrivals are still the most popular measure of

tourism demand, tourist expenditure appears also as a very interesting measure of tourism demand, since it enables explanation of the value of tourism demand in economic terms.

A wide range of different explanatory variables can be found in order to explain tourist expenditures in several tourism demand studies. In models based on primary data, variables can be grouped into several areas, such as behavioural factors (see, for instance, Mehmetoglu, 2007; Lehto *et al.*, 2004; Kastenholtz *et al.*, 1999; Lau and McKercher, 1994; and Godbey and Graefe, 1991), economic and socio-demographics which include, for example, age, gender, occupation, education, household income, nationality and marital status (see among others, Bojanic, 2011; Wang and Davidson, 2010; Kozak *et al.*, 2008; Hsieh and Chang, 2006; Ham *et al.*, 2004; Mergoupis and Stener, 2003; Perez and Sampol, 2000; Agarwal and Yochum, 1999; and Crouch, 1994). Song *et al.* (2012) highlighted the potential difficulties that these studies faced in order to select and include the appropriate explanatory variables and, at the same time, the problem of potential multicollinearity among the variables.

Another stream of research analyzed determinants of tourist expenditure which are based on secondary data. Song *et al.* (2012), puts forward the demand theory in order to explain that the critical factors that shape a tourist's budget restriction are income and the price of tourist product/service. Thus, tourism demand studies that base their analysis on secondary data use as explanatory variables, exchange rates (Lim, 1997), income of origin country/region, price index of destination and substitute prices of alternative destinations (Song *et al.*, 2012; and Song *et al.*, 2009).

5.2.2 Tourist spending decision and travel motivation

Since tourists have already made a decision to travel, Dolnicar *et al* (2008) assert that this assumption means that tourists have already made a decision to spend a portion of their budget on holidays rather than spending it on other consumption options. According to Decrop and Snelders (2004), the amount of money spent on holidays and the choice where it is spent are essential to the argument of vacation decision-making. Kozak *et al.* (2008) pointed out the fact that to achieve a travel budget "equilibrium", tourists may use several tactics. Thus, keeping the stay at the destination shorter or longer, travelling with fewer or more companions, selecting a suitable accommodation

arrangement or choosing a destination that best fits their travel motivations, are key factors that influence tourist spending decisions.

In order to study individuals' behaviour in terms of the decision-making process, one of the most often quoted theories is the Discrete Choice Theory. It assumes the existence of non-observable preferences and the existence of an utility function. Discrete Choice Theory considers individuals' choice behaviour as a probabilistic process, which means that for modeling purposes it is intended to incorporate a certain degree of uncertainty.

By suggesting a model that breaks away from the traditional approach to consumer theory which stated that goods have utility, Lancaster (1966), assumed that products have no utility by themselves rather they have a number of characteristics/attributes that give utility to the products. The first application of Lancaster's principle to tourism was conducted by Rugg (1973). Decrop (2006) underline that Rugg incorporated three dimensions into Lancaster's model, which were ignored by tourism demand economists at the time. Namely, time constraint, transportation costs (by modifying the time constraint) and time costs (by modifying the time constraint).

Grundey (2006) identified price, income and personal tastes as the three main factors which economists claim are an influence on tourist consumption, although the latter factor is usually disregarded by economists as being outside the sphere of standard economics. According to the author, the field of psychology shows an interest in the decision making process and how various factors – with the analysis of motivations among the prime – can stimulate and influence it.

In this vein motivations may be understood as the strength to practice a specific action and contain results of situation-person interactions (Gnoth, 1997). Therefore it should be emphasized that behind tourists' selection of a particular holiday destination lies a desire for benefits of one kind or another.

Concerning destination-related travel motivations, Wang and Davidson (2010) made a very useful literature review where the authors highlight the importance of travel activities as a determinant of travel expenditures (e.g., Alegre *et al.*, 2011; Alegre and Cladera, 2009; Jang *et al.*, 2002; Kastenholtz *et al.*, 1999). Travel activities related to

nature, beach and the outdoors, and entertainment are more profitable than others (Jang *et al.*, 2005). In another stream of activities, Laesser and Crouch's (2006) research, shows that tourists engaging in activities related with beaches or local culture seem to present lower expenditure than those related to gambling, food and wine.

In this sense it is important to highlight that motivations initiate actions and guide satisfactory behaviour but more specific filters of choices are exercised by decision makers' preferences (Goodall, 1991). According to Decrop (2006), these filters are expressed, on the one hand by the evaluation of alternative holidays, which is made possible through the formation of mental images; and on the other by package choice, once the generic decision has been made, holiday requirements must be specified and an information search process begins in order to find the holidays that best fit those requirements, taking into consideration time and budget constraints.

Papatheodorou (2001) suggested a discrete choice model on the assumption that vacationers travel only to the destination which is associated with the highest utility. Thus, the basis of the travelers' decision-making process was a functional decision-making process that is influenced by a number of economic and non-economic factors. Indeed, given that the present research intends to identify the dynamic patterns of international tourist expenditure over time, assumptions of discrete choice theory will be helpful in order to understand which motivations present the highest utility over time. Thus, motivations provide an explanation for a large part of tourist behaviour, lying at the base of the travel decision-making process (Barros *et al.*, 2008; Correia *et al.*, 2007; Correia and Kozak, 2012; Correia and Pimpão, 2008; Kozak, 2002; Um *et al.*, 2006).

5.3 Hypotheses on moderate determinants for tourist expenditures

Tourist expenditure reflects they way in which they value the destination, and can be seen as a proxy for perceived utility. Given that destinations do not have utility in themselves, they are endowed with a set of activities / attributes which lend them a particular utility. In other words, tourists have a dynamic buying behaviour that is reflected in their tourist expenditure. International tourists who travelled to the Algarve reveal dynamic behaviour in travel spending over time. Thus, this statement is based on the utility that tourists receive from changing their spending when visiting the Algarve. Thus, this modification of spending behaviour which underlines the utility states the following hypotheses:

Hypothesis 1 (past behaviour): Past visits (repeat) at the destination positively affects tourists' expenditure.

This variable has not shown consistent behaviour in several studies. Demand theory based its assumptions on the rationality of consumer behaviour. Indeed, social exchange theory[ii] helps explain the repeat spending behaviour of tourists. *This theory assumes that behaviour is predicated upon the notion of rationality* (Godbey and Graefe, 1991: 217).

One of the first studies that attempted to analyze differences of first-time/repeat visitors in order to explain tourist expenditures was Mak *et al.* (1977). The authors concluded that there is no significant difference between them. In the same line of thought Wang and Davidson (2010) agree with this statement. However, other authors conclude that repeat visitors tend to spend less than first-time visitors (Jang *et al.*, 2004). The opposite was also claimed by Perez and Sampol (2000) when the focus of analysis was mass tourism markets and the holidays were based on full-board services. Findings provided by Kozak *et al.* (2008), support the proposition that repeat visitors are likely to spend more than first-time visitors.

Hypothesis 2 (travel companion): Travel companion positively affects tourists' expenditure. Following the personality profiles suggested by Plog (1974), it is evident that those labelled as dependables prefer to be surrounded by family and friends, whereas venturers prefer to be alone. In this vein, we can hypothesize that some of the

difference in the level of tourist expenditure can be explained by the objective elements of any trip, among which, number of travel companions from the same household (Laesser and Crouch, 2006).

Hypothesis 3 (previous overall satisfaction): Overall satisfaction with past visits positively affects tourists' expenditures. Tourist satisfaction has its origins in customer satisfaction theory, in which motives are categorized into internal (emotional satisfaction) and external (cognitive satisfaction). To be cognitively satisfied, tourists must appreciate the instrumental performance of the destination, with pre-known attributes of the destination being maintained to their satisfaction. Yoon and Uysal (2005) put forward that overall satisfaction consists of an interrelation of instrumental and expressive attributes. According to many studies (e.g. Garbarino and Johnson, 1999; Oliver, 1980; Parasuraman *et al.*, 1988), there is a relation between overall satisfaction and particular facets of the product or service. The influence that this construct has on the decision to return makes it an important variable when considering the importance of tourist satisfaction in the success of a destination (Kozak and Rimmington, 2000). Nonetheless the existence of several studies that discuss the overall tourist satisfaction construct, few studies analyzed the relation between tourist satisfaction with destination and expenditure (Zhang *et al.*, 2010).

Hypothesis 4 (previous behavioural intentions): Previous behavioural intentions affects tourists' spending. Festinger (1954) stated that satisfaction in relation to the destination influences future behaviour. Beerli and Martín (2004) established that sun and sea destinations with a good image enjoy a high level of repeaters. Kozak (2001) demonstrated that overall satisfaction and the number of previous visits considerably influence the intention to return, especially in mature destinations. Kozak (2003) also concluded that destination attributes influence future behavioural intentions and satisfaction.

Hypothesis 5 (economic and socio-demographic variables): Economic and Socio-demographic variables are positively and significantly related to tourist expenditures.
A plethora of authors claim that putting economic and social-demographic variables together on the same model could increase the explanatory power of the model significantly (e.g. Asgary *et al*, 1997). Upon analyzing the literature, several studies can

be found that analyze tourist expenditure, with the socio-demographic profile being taken into account (Wang and Davidson, 2010; Alegre and Juaneda, 2006; Jang *et al.*, 2002; and Mok and Iverson, 2000). However, empirical findings showed distinct conclusions. In terms of economic variables and because of its importance for economic theory in order to explain the restriction of consumer behaviour, income is one of variables that was used most frequently (Brida and Scuderi, 2013; Sainaghi, 2012; Wang and Davidson, 2010; and Lim, 1997).

Hypothesis 5a: The origin market affects tourists' spending

Hypothesis 5b: Age groups affect tourists' spending

Hypothesis 5c: The level of household income affects tourists' spending

Hypothesis 5d: Gender affects tourists' spending

Hypothesis 5e: The level of education affects tourists' spending

Hypothesis 5f: Marital status affects tourists' spending

Hypothesis 6 (Tourist motivations/preferences): Tourist motivations/preferences positively affects tourists' spending. Motivations for travel change over time and are influenced by past holiday experiences. Dann (1977, 1981) introduced the Pull and Push Theory of tourist motivation, which discussed and explained the factors that predispose a person to travel and those that attract the tourist to a given destination. The former are related to internal motives that explain why people travel (Crompton, 1979; and Dann, 1977). Pull factors are related to external motives mainly exhorted by destination attributes (Crompton, 1979). Given the importance of travel motivations in the study of tourist behaviour, Mansfeld (1992) emphasized the role of motivation in travel behaviour. Thus, "incorporating tourist motivations in expenditure models could be a way of taking into account this kind of factor when determining tourist expenditure" (Alegre *et al.*, 2011: 817).

Hypothesis 7 (number of nights spent at destination): Length of stay affects tourists' spending. Current hypotheses are in line with many other studies that considerer a positive and significant estimation relating with tourist spending that used number of nights as metric regressor (Brida and Scuderi, 2013). For mature destinations (e.g. sun and sand destinations), it seems quite important to maintain a sustainable level of tourism. Thus, the main objective is not a constant increase of tourist arrivals but rather tourism revenue (among others, see Alegre *et al.*, 2011). For destination management,

this is an important issue because tourist companies at the destination reveal the desire for growth in terms of market share by attracting tourists who tend to spend their money but also their time (Kozak *et al.*, 2008 and Mok and Iverson, 2000).

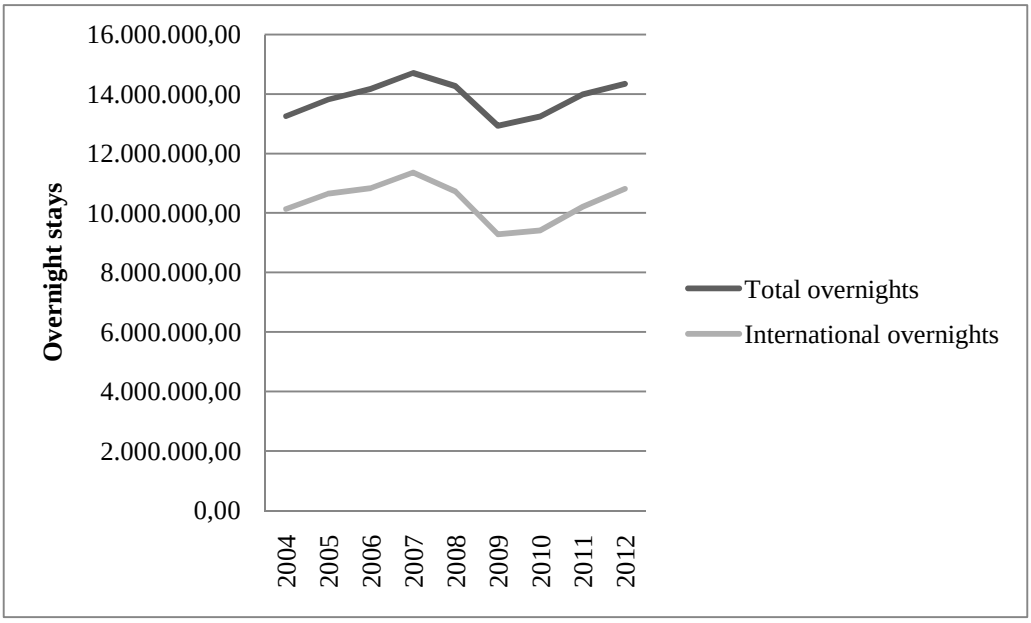
The hypotheses previously described were tested by the adoption of a cross-sectional data method with the support of OLS.

5.4 Methodology

5.4.1 Research contextual setting

The economy of the Algarve is based on the tertiary sector, with a high weight on tourism. Concerning international tourism demand in the Algarve, the region received 10.578 million international overnights in 2012 which correspond to 75% of total overnights in the region (Turismo de Portugal, IP., 2013a) (see Figure 5.1).

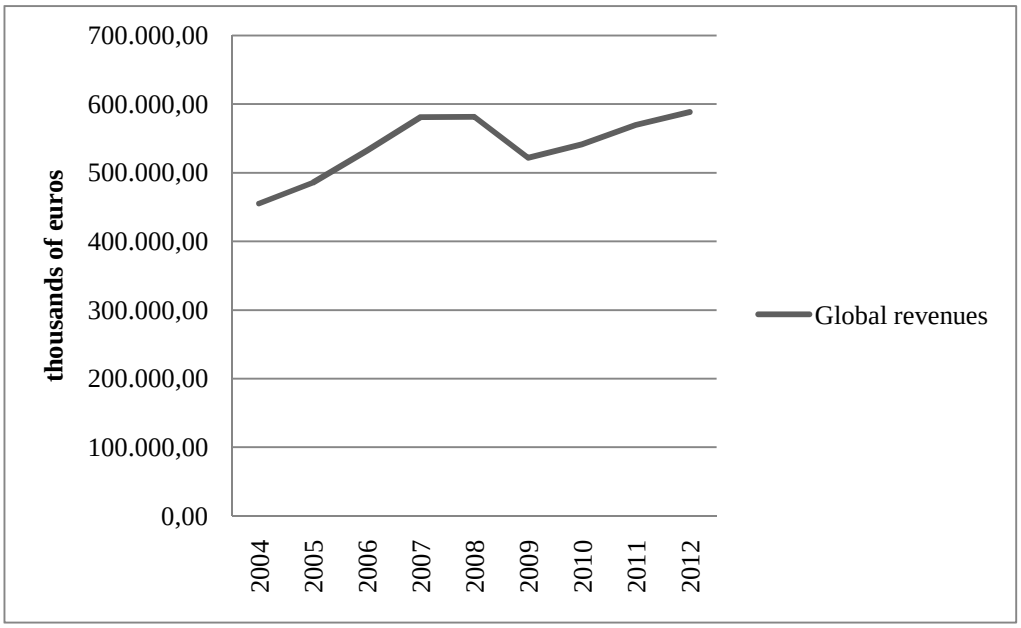
Figure 5.1 - Overnights stays in the Algarve region (2004-2012)



Source: Turismo de Portugal, IP (2013a; 2013b).

Concerning total hotel industry revenues in the Algarve between 2007 and 2010, the average growth rate was -2%, resulting in a drop in performance from 581.116 million euros in 2007 to 541.142 million euros in 2010. In the year 2012, the Algarve region registered 588.283 million euros revealing a subtle increase since 2010 (see Figure 5.2).

Figure 5.2 - Global hotel industry revenues – Algarve (2004-2012)



Source: Turismo de Portugal, IP (2013c; 2013d).

The Algarve is a well-know international tourism destination, as a result of its climate, beautiful beaches and gastronomy. However, sun and sea was and still is the most important driver for foreign tourists, which reveals the potential to attract new and repeat visitors.

5.4.2 Study methods

Data were provided by means of a questionnaire (see table 5.1) applied between the years 2007 and 2010, which was presented to a stratified, random sample of international tourists at their departure in Faro airport (Correia and Pimpão, 2012). The definition of the sample was based on the number of international departures from Faro Airport from 2007 till 2010. The population of the study is matched to all international tourists visiting the Algarve for the purpose of holiday/leisure. With the permission of the Faro Airport authority, questionnaires were administrated in the airport departures lounge. Over the four years in which the administration of this questionnaire occurred, the interviews were made randomly. A total of 15542 persons were interviewed. A total of 2636 questionnaires were collected in 2007; 2187 in 2008; 5938 in 2009 and 4781 in 2010.

Table 5.1 - Questions extracted from questionnaire

Question	*Scale/options*	*Recoded scale*	*Variable*
Part A. Trip Logistics			
Who are/were you travelling with	Spouse Family Friends Alone Excursion group Other	Alone Spouse/family Friends/Excursion groups /others	alone spouse_family friends_group
Where did you stay: days; nights	Open answer		OVER
Part C. Travel Experience			
Have you visited your final destination before? (Past behaviour)	No Yes		PB
Part E. Motivations			
When deciding your travel itinerary, how important were the following aspects?	Not important Somewhat important Moderately important Quite important Extremely important Motivations: Cleanliness Cultural and historical resources Information available Closeness to home Accommodation Gastronomy Price Hospitality Sightseeing and excursions Golf facilities		 PULL1 PULL4 PULL 7 PULL 10 PULL11 PULL12 PULL13 PULL18 PULL21 PULL22
Part F. Tourist experience and satisfaction			
What is the degree of your overall satisfaction with the destination?	Very dissatisfied Dissatisfied Satisfied Very satisfied Extremely satisfied		oversatis
Do you intend to return to your final destination?	No I don't know Probably For sure	No Yes	RI
Would you recommend it to friends and relatives?	No I don't know Probably Definitely	No Yes	REC
Part G. Personal Characteristics			
Age	Open answer	Less than 30 years old Between 31 and 50 years old 51 years old and above	less_30 bet_31_50 more_51
Gender	Female Male		gen
Social status	Single Married/Living together Divorced Widowed	 Single Divorced/Widowed Married/Living together	Single Divorced_widowed Married_livingtogether
Family average monthly income	Less than 2000€ 2001€ - 3500€ 3501€ - 5000€ 5001€ - 8000€ 8001€ and above	Less than 3500€ Between 3501€ and 5000€ 5001€ and above	less_3500 bet_3510_5000 more_5001
Employment situation	Employed Unemployed Not active Student Retired Other	Unemployed Not active Retired Student Employed	unemployed not_active retired student employed
Education	Elementary Secondary University/College Post-graduate Other	Elementary Secondary University	Elementary Secondary university
Nationality	Open answer	United Kingdom Germany The Netherlands Ireland Scandinavia Others	UK GER NE IR SCAN OTHER

Source: Correia and Pimpão (2012).

In terms of the total tourists surveyed in four years, 53.7% were female, 31.2% were aged under 30, 48.8% were aged 31-50 and 20,1% were older than 51. 75.9% had secondary education (edu_secondary) and only 1.6% had an university degree (edu_universitary). 29.9% were single, 67.3% married or living together and 2.8% divorced or widowed in terms of marital status. 38.1% earned a monthly household income of less than 3500€, 40.8% between 3501€ and 5000€ and 21.1% more than 5001€. 52% intended to return (ri_yes) on holidays to the Algarve, 44.5% would recommend (rec_yes) the destination. 80.5% were very satisfied with the destination (satis_4), 16.5% were extremely satisfied (satis_5) and 1% were dissatisfied (satis_2). 53.4% had not visited the destination before (pb_no) and 46.6% had already visited the destination (pb_yes). 62.3% were employed, 22% were unemployed, 9.3% were not active and 5.0% were students. 70% of visitors travelled with spouse and family (spouse_family), 20.4% with friends/groups (friends_groups) and 9.6% travelled alone. 29.8% were British (UK), 24.2% were German (GER), 18.1% were Irish (IR), 8.9% were Scandinavian (SCAN), 5.3% were Dutch (NE) and 13.7% were other nationalities. Regarding the average overnight stays by year, in 2007 international tourists stayed on average 8.9 nights; 2008 registered 9.2 nights; 2009 obtained 7.5 nights and in 2010 gathered 8.27 nights. Average daily tourist spending in 2007 was 71.08€; 2008 registered 64.84€; 2009 came in at 111.41€ and lastly in 2010 it was 91.67€.

5.4.3 Model specification and estimation

The traditional specification of the tourism demand function was adopted in order to test the hypotheses previously stated, i.e.,

$$\begin{aligned} Exp_{it} = \alpha_0 + \beta_1 UK_{it} + \beta_2 GER_{it} + \beta_3 NE_{it} + \beta_4 IR_{it} + \beta_5 SCAN_{it} + \beta_6 OTHER_{it} \\ + \beta_7 PB_{it} + \beta_8 oversatis_{it-1} + \beta_9 RI_{it} + \beta_{10} REC_{it} + \beta_{11} gen_{it} \\ + \beta_{12} alone_{it} + \beta_{13}\, spouse\_family_{it} + \beta_{14}\, friends\_group_{it} \\ + \beta_{15} single_{it} + \beta_{16}\, 〚divorced\_widowed〛\_it \\ + \beta_{17} married\_livingtogether_{it} + \beta_{18} unemoployed_{it} \\ + \beta_{19} not\_active_{it} + \beta_{20} retired_{it} + \beta_{21} student_{it} \\ + \beta_{22} employed_{it} + \beta_{23} less\_3500_{it} + \beta_{24} bet3500\_5000_{it} \\ + \beta_{25} more\_5001_{it} + \beta_{26} elementary_{it} + \beta_{27} secondary_{it} \\ + \beta_{28} universitary_{it} + \beta_{29} less\_30_{it} + \beta_{30} bet\_31\_50_{it} \\ + \beta_{31} more\_51_{it} + \beta_{32} over_{it} + \beta_{33} pull1_{it} + \beta_{34} pull2_{it} \\ + \beta_{35} pull7_{it} + \beta_{36} pull10_{it} + \beta_{37} pull11_{it} + \beta_{38} pull12_{it} \\ + \beta_{39} pull13_{it} + \beta_{40} pull18_{it} + \beta_{41} pull21_{it} + \beta_{42} pull22_{it} + \varepsilon_i \end{aligned} \quad (9)$$

The Scheffe test was used to test for significant differences by year of tourist motivations. The results confirmed that there is a difference in tourist motivations across the years. The tourist motivations considered in the model were the ones that presented most variability over the years (see table 5.2).

Table 5.2 - Scheffé test (multiple comparisons)

Dependent Variable (motivations/preferences)		Year (I)	Year (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Cleanliness	Scheffé	2009	2007	-.649*	.028	.000	-0.73	-0.57
			2008	-.630*	.030	.000	-0.72	-0.54
			2010	-.492*	.024	.000	-0.56	-0.43
		2010	2007	-.157*	.030	.000	-0.24	-0.07
			2008	-.138*	.031	.000	-0.23	-0.05
			2009	.492*	.024	.000	0.43	0.56
Cultural and historical resources	Scheffé	2009	2007	-.684*	.028	.000	-0.76	-0.61
			2008	-.472*	.029	.000	-0.55	-0.39
			2010	-.068*	.023	.034	-0.13	-0.00
		2010	2007	-.616*	.029	.000	-0.70	-0.54
			2008	-.405*	.030	.000	-0.49	-0.32
			2009	.068*	.023	.034	0.00	0.13
Information available	Scheffé	2009	2007	-.724*	.027	.000	-0.80	-0.65
			2008	-.557*	.029	.000	-0.64	-0.48
			2010	-.412*	.022	.000	-0.47	-0.35
		2010	2007	-.313*	.028	.000	-0.39	-0.24
			2008	-.145*	.029	.000	-0.23	-0.06
			2009	.412*	.022	.000	0.35	0.47
Closeness to home	Scheffé	2009	2007	-.938*	.029	.000	-1.02	-0.86
			2008	-.923*	.031	.000	-1.01	-0.84
			2010	-.242*	.024	.000	-0.31	-0.18
		2010	2007	-.696*	.030	.000	-0.78	-0.61
			2008	-.681*	.031	.000	-0.77	-0.59
			2009	.242*	.024	.000	0.18	0.31
Accommodation	Scheffé	2009	2007	-.624*	.028	.000	-0.70	-0.50
			2008	-.592*	.030	.000	-0.68	-0.51
			2010	-.409*	.023	.000	-0.47	-0.34
		2010	2007	-.215*	.029	.000	-0.30	-0.13
			2008	-.183*	.031	.000	-0.27	-0.10
			2009	.409*	.023	.000	0.34	0.47
Gastronomy	Scheffé	2009	2007	-.416*	.029	.000	-0.50	-0.34
			2008	-.404*	.031	.000	-0.49	-0.32
			2010	-.070*	.023	.034	-0.14	-0.00
		2010	2007	-.346*	.030	.000	-0.43	-0.26
			2008	-.333*	.032	.000	-0.42	-0.24
			2009	.070*	.024	.034	0.00	0.14
Price	Scheffé	2009	2007	-.190*	.027	.000	-0.27	-0.12
			2008	-.389*	.029	.000	-0.47	-0.31
			2010	-.269*	.022	.000	-0.33	-0.21

		2010	2007	.079*	.028	.047	0.00	0.16
			2008	-.120*	.030	.000	-0.20	-0.04
			2009	.269*	.022	.000	0.21	0.33
Hospitality	Scheffé	2009	2007	-.512*	.027	.000	-0.59	-0.44
			2008	-.467*	.029	.000	-0.55	-0.39
			2010	-.300*	.023	.000	-0.36	-0.24
		2010	2007	-.212*	.028	.000	-0.29	-0.13
			2008	-.166*	.030	.000	-0.25	-0.08
			2009	.300*	.023	.000	0.24	0.36
Sightseeing and Excursions	Scheffé	2009	2007	-.447*	.028	.000	-0.53	-0.37
			2008	-.427*	.030	.000	-0.51	-0.34
			2010	-.155*	.023	.000	-0.22	-0.09
		2010	2007	-.292*	.029	.000	-0.37	-0.21
			2008	-.271*	.031	.000	-0.36	-0.18
			2009	.155*	.023	.000	0.09	0.22
Golf facilities	Scheffé	2009	2007	-.079*	.028	.044	-0.16	-0.00
			2008	-.437*	.030	.000	-0.52	-0.35
			2010	.023*	.023	.793	-0.04	0.09
		2010	2007	-.102*	.029	.005	-0.18	-0.02
			2008	-.461*	.031	.000	-0.55	-0.38
			2009	-.023*	.024	.793	-0.08	0.04

Source: Own elaboration.

In order to select the significant variables over the years for each model, STATA 12 was used, models were estimated by OLS, and variables selected based on the estimated p-values (see table 5.3).

Table 5.3 -Variables identified with stepwise regression from 2007 to 2010

2007	2008	2009	2010
UK	GER	UK	UK
PB	IR	GER	GER
RI	OTHERS	NE	PB
REC	PB	IR	OVERSATIS
GEN	OVERSATIS	OVER	REC
PULL1	RI	PB	GEN
PULL4	REC	OVERSATIS	PULL10
PULL22	GEN	RI	PULL11
ALONE	PULL1	REC	PULL13
SPOUSE_FAMILY	PULL12	GEN	PULL18
SINGLE	PULL13	PULL11	PULL22
LESS_3500	PULL22	PULL13	SPOUSE_FAMILY
MORE_51	ALONE	PULL21	FRIENDS_GROUP
	SPOUSE_FAMILY	ALONE	NOT_ACTIVE
	MARRIED_LIVINGTOGHETER	SPOUSE_FAMILY	LESS_3500
	LESS_3500	SINGLE	BET_3500_5000
	BET_3500_5000	MARRIED_LIVINGTOGHETER	BET_31_50
	BET_31_50	NOT_ACTIVE	
		RETIRED	
		STUDENT	
		LESS_3500	
		BET_3500_5000	
		SECONDARY	
		BET_31_50	

Source: Own elaboration.

According to Cameron and Trivedi (2010), in the analysis of a linear regression model, it is necessary to assume that ε_i satisfies the classical conditions, and that the exogeneity of regressors is also observed. In the course of model estimation, heteroskedastic uncorrelated errors were detected from the application of the White's and Breusch-Pagan / Cook-Weisberg tests for heteroskedasticity in each model, and as a consequence robust estimation was adopted. For the purpose of testing for parameter equality across the years, a nested test was conducted. An F-test was adopted to compare nested models, one with k parameters and the other with $k + p$ parameters in order to test the following hypotheses:

H_0: $\beta_{k+1} = \beta_{k+2} = \ldots = \beta_{k+p} = 0$

H_a : at least one $\beta \neq 0$ (10)

5.5 Results and analysis

Table 5.4 shows the robust estimation results. For the purpose of the regression analysis, the variables extracted from the questionnaire (see table 5.1), were redefined and for all of them dummies were created (including the dependent variable). After ensuring that all variables in the final models were jointly statistically significant at the 0.05 level, a Wald test was conducted in order to assess the equality of parameters. Concerning the quality of adjustment (R^2), it was possible to achieve the highest possible score through the adoption of a stepwise regression process (see table 5.3). According to results presented in the table 5.4, in 2007 the model explains 70.48% of international tourist daily spending; 86.78% in 2008; 61.23% in 2009 and 50.97% in 2010. Wooldridge (2006), states that a model with an explanatory power above 50% provides acceptable goodness-of-fit.

Table 5.4 - Results of the robust estimators (Dependent: daily tourist expenditure)

2007 Variables	Coeff. and Sig.	**2008** Variables	Coeff. and Sig.	**2009** Variables	Coeff. and Sig.	**2010** Variables	Coeff. and Sig.
UK	.713 (0.045) **	GER	-.514 (0.001) *	UK	1.533 (0.001) *	UK	-2.648 (0.000) *
PB	3.957 (0.026) **	IR	-.428 (0.005) *	GER	4.897 (0.000) *	GER	-1.982 (0.000) *
RI	6.754 (0.000) *	OTHERS	-.428 (0.001) *	NE	.376 (0.000) *	PB	10.111 (0.000) *
REC	7.183 (0.000) *	PB	2.396 (0.022) **	IR	3.000 (0.000) *	OVERSATIS	-.319 (0.000) *
GEN	7.451 (0.000) *	OVERSATIS	-.079 (0.000) *	OVER	.537 (0.001) *	REC	5.742 (0.005) *
PULL1	2.302 (0.007) *	RI	3.107 (0.011) **	PB	7.583 (0.000) *	GEN	6.065 (0.002) *
PULL4	1.894 (0.017) **	REC	2.706 (0.022) **	OVERSATIS	-.466 (0.000) *	PULL10	-1.367 (0.100) ***
PULL22	-1.611 (0.007) *	GEN	6.743 (0.000) *	RI	6.685 (0.001) *	PULL11	2.697 (0.002) *
ALONE	8.008 (0.033) **	PULL1	2.471 (0.000) *	REC	4.824 (0.013) **	PULL13	2.213 (0.023) **
SPOUSE_FAMILY	8.472 (0.001) *	PULL12	1.045 (0.097) ***	GEN	11.204 (0.000) *	PULL18	2.411 (0.010) **
SINGLE	9.858 (0.000) *	PULL13	1.565 (0.012) **	PULL11	2.253 (0.003) *	PULL22	2.336 (0.009) *
LESS_3500	3.980 (0.074) *	PULL22	2.048 (0.000) *	PULL13	3.211 (0.000) *	SPOUSE_FAMILY	13.617 (0.000) *
BET_31_50	7.947 (0.001) *	ALONE	7.193 (0.001) *	PULL21	2.995 (0.000) *	FRIENDS_GROUP	13.411 (0.001) *
MORE_51	11.526 (0.000) *	SPOUSE_FAMILY	5.279 (0.002) *	ALONE	10.908 (0.001) *	NOT_ACTIVE	-12.066 (0.000) *
_cons	.043 (0.584) ns	MARRIED_ LIVINGTOGHETER	3.527 (0.012) **	SPOUSE_FAMILY	9.548 (0.000) *	LESS_3500	16.572 (0.000) *
		LESS_3500	3.950 (0.010) **	NOT_ACTIVE	-15.332 (0.000) *	BET_3500_5000	13.618 (0.000) *
		BET_3500_5000	4.083 (0.002) *	RETIRED	-23.200 (0.000) *	BET_31_50	7.237 (0.002) *
		SECONDARY	2.223 (0.048) **	LESS_3500	19.120 (0.000) *	_cons	3.074 (0.000) *
		LESS_30	8.526 (0.000) *	BET_3500_5000	19.552 (0.000) *		
		BET_31_50	8.412 (0.000) *	SECONDARY	7.264 (0.000) *		
		_cons	.459 (0.000) *	_cons	.105 (0.000) *		
Obs. #	15542	Obs. #	15542	Obs. #	15542	Obs. #	15542
N	2636	N	2187	N	5938	N	4781
Min	10	Min	5	Min	10	Min	10
Max	201	Max	200	Max	400	Max	666
Mean	71.08	Mean	64.84	Mean	111.41	Mean	91.67
Std dev	41.156	Std dev	22.639	Std dev	68.025	Std dev	74.278
F statis	535.97	F statis	1056.00	F statis	785.07	F statis	435.74
R-Square	0.704	R-Square	0.867	R-Square	0.612	R-Square	0.509
Root-MSE	17.179	Root-MSE	8.763	Root-MSE	42.706	Root-MSE	41.371
Wald test	535.97 (0.000)	Wald test	1056.00 (0.000)	Wald test	785.07 (0.000)	Wald test	435.44 (0.000)
Nested-test(F statis)	28.13 (0.000)	Nested-test (F statis)	38.44 (0.000)	Nested-test (F statis)	15.48 (0.000)	Nested-test (F statis)	4.98 (0.000)

( ) probabilities; *** = significant at 10% level; ** = significant at 5% level; * = significant at 1% level.
ns = no statistically significance

Source: Own elaboration.

Table 5.4 provides the results for the four estimated models. A first attempt at interpreting findings showed different explanatory determinants of tourist spending across years. In this vein results reveal the confirmation or non-confirmation of the following hypotheses.

H1, *past behaviour*: Table 4 reveals that repeaters are an important determinant of tourist spending across the years. Findings show that being a repeat visitor positively affects tourist expenditures. In support of the results, other studies have also demonstrated the positive relation of repeaters with tourist spending (Kozak *et al.*, 2008; and Perez and Sampol, 2000). Hence, *hypothesis 1 is not rejected*.

H2, *travel companion*: Travel companion was found to be significant across the years. However, there is evidence (see e.g. Kozak *et al.*, 2008), that suggests that as the number of companions' increases, daily spending decreases. In other words, spending per person will be lower as the number of elements increases. Table 4 reveals that when tourists travel alone, the average daily spending tends to increase, with the exception of years 2007 and 2010. According to the above results *hypothesis 2 is partially not rejected*.

H3, *previous overall satisfaction*: Previous overall satisfaction (t-1) affects tourist spending. As suggested by Yoon and Uysal (2005), the instrumental and expressive attributes related to one another produce overall satisfaction. Many studies have related overall satisfaction to specific aspects of the product or service (e.g. Garbarino and Johnson, 1999; Parasuraman *et al.*, 1988; Oliver, 1980). Brida and Scuderi (2013) exert that opinion about the holidays was measured through both metric and dummy regressors. Considering the results presented in Table 5.4, less satisfied tourists tend to spend less across the years. Other studies addressed the same negative sign (e.g. Chen and Chang, 2012). Thus, considering the above results, *hypothesis 3 is not rejected.*

H4, *previous behavioural intentions:* Behavioural intentions affects tourists' spending. Findings reveal that recommendation of destination and return intention positively affect tourist spending across the years. According to the results, it is possible to support the hypothesis that behavioural intentions generate a positive effect on tourist expenditures, generating higher expenditures across the years. Other studies adopt this determinant in order to explain tourist expenditures, mainly concerning the intention to

re-visit. Although this variable presents statistical significance, the results of other studies contradict the findings of the present study because the sign is negative (e.g., Chhabra *et al.*, 2002). Thus, *hypothesis 4 is partially not rejected*.

H5, *social-demographic variables*: Economic and social-demographic variables are positively and significantly related with tourist expenditures. With regard to social-demographic characteristics, the effects of the significant variables on tourist spending are:

H5a, *The origin market affects tourists' spending*: Nationality is a significant independent variable in the four years. However, for dummy variables, UK; GER; IR; NE; SCAN and others, there are no simultaneous significance across the years, and the direction of their sign even changes in a few of these origin markets. Thus, German and Irish tourists' spending undergoes a decrease in expenditure in 2008 and particularly in 2010 for Germany and the United Kingdom. Thus, following the results presented in Table 4, *hypothesis 5a is not rejected*.

H5b, *age groups affects tourists' spending*: Age-related variables are undoubtedly in absolute terms the most used (Brida and Scuderi, 2013). The dummy variables for age show significant positive effects on tourist spending, but not in every year. In 2007 middle-aged tourists spent less than older tourists. Thus, considering these results *hypothesis 5b is partially not rejected*.

H5c, *the level of household income affects tourists' spending (low income tourists spend less than middle and high income tourists)*: Concerning economic constraints, income is the most frequently employed variable in estimating regressors that explain tourist expenditure behaviour (Brida and Scuderi, 2013). Following the results presented in Table 4, as expected, dummy variables are positive and statistically significant. Between 2007 and 2009, lower income tourists (< 3500€) spend less than middle income tourists (3501€-5000€), confirming what the authors addressed. However, in 2010 regressors present different patterns, revealing that low incomers spend above the average. Results presented above concerning *hypothesis 5c lead it to be partially not rejected*.

H5d, *Gender affects tourists' spending*: This variable shows a significant and positive effect across the years. The present findings contradict results gathered by other authors (among others, e.g., Wang and Davidson, 2010; Jang *et al.*, 2004; and Agarwal and Yochum, 1999). Hence, from the results of the regression, *hypothesis 5d is not rejected*.

H5e, *The level of education affects tourists' spending*: Although education is considered in the tourism demand function in (9) and appears as a dummy explanatory variable, it is not significant in all years. Results presented in Table 4 reveal that tourists with a secondary level of education have a positive effect on tourist expenditures in 2008 and 2009. According to the above results *hypothesis 5e is partially not rejected*.

H5f, *Marital status affects tourists' spending*: This explanatory variable appears in some regressors. Although the sign is positive in the years 2007 and 2008, results show that tourists who are not married spend more than married tourists. These findings are in line with Asgary *et al.* (1997); and Mak *et al.*, (1977). Thus, *hypothesis 5f is partially not rejected.*

H6, *Tourists motivations*: As far as the motivational dimension is concerned, the findings support the fact that the effect of some is statistically significant, and so it is justifiable to include them in the expenditure models. In particular, the basic facility attributes of a sun and sand destination have a positive effect across the years (mainly accommodation and cleanliness). However, other motivations emerge revealing new avenues for the diversification of the tourism product in the Algarve. Thus motivations of cultural and historical resources, gastronomy, sightseeing and excursions and hospitality show a positive effect on tourism expenditure (see results in table 4). So it can be seen that the results agree with those of Alegre *et al.* (2011), who stated that the high-expenditure stratum of tourists will include those who are more highly motivated by local culture or tourist facilities. Another motivation that appears with a positive effect on tourist spending is price. With regard to the estimated coefficients present in table 5.4, it is evident that tourists are not so affected by high prices. Comparing prices with other motivations (table 5.4) seems to suggest that, for golf, gastronomy, sightseeing and excursions, and accommodation, tourists are probably willing to pay a higher price to obtain them. These results are in line with other motivations studies that analyze the effect of travel motivations on tourist expenditure. For instance Kastenholtz

(2005); and Kastenholtz *et al*, (1999) argues that tourists who value good hospitality and experience with culture and history, and whose demand is also mainly for accommodation and gastronomy, are those with higher spending levels. Concerning the negative effect on tourist expenditure of the closeness to home motivation in 2010, probably this result is related to the lesser amount spent concerning the cost of transport. Thus, *hypothesis 6 is not rejected.*

H7, *number of nights spent at destination*: Length of stay affects tourists' spending. According the results expressed in table 4, besides this variable only is statistically significant in one year (2009), the signal is positive. Possibly this finding is related with the highest value of average daily spending (111.41€) that was registered in the time period under analysis. Thus, h*ypothesis 7 is partially not rejected.*

5.6 Conclusions and implications

This paper considers tourist expenditure an important variable in international tourism demand analysis. The purpose of the current research was to determine the extent to which motivational, behavioural and social-demographics factors affect tourist spending of international tourism demand in the Algarve. In order to estimate the demand model, a multiple regression analysis was adopted in the present cross-section study. This paper uses regression coefficients in currencies which are directly interpretable, e.g. the euro, thus making the interpretation of the analysis of each year easier. The relation between some determinants and their effect on tourist spending is not, however, linear. To accommodate this, dummy variables were used in this study, dividing the analysis by year (2007, 2008, 2009 and 2010).

In order to test several hypotheses, results revealed that a combination of social-demographics, motivations and travel behavioural factors affects tourist spending. Therefore, findings seem to suggest that the Algarve maintains a dynamic pattern concerning tourist spending behaviour across the years. In the case of tourist motivations, the final regression results identified that not all motivations appear to be statistically significant across the years, and also their influence on tourist spending seems to present different patterns across the years. Thus, accommodation, cleanliness, closeness to home, cultural and historical resources, gastronomy, hospitality, golf facilities, price, sightseeing and excursions are significant. However, almost all

motivation regressors emerge with a positive effect across the years excluding closeness to home and golf facilities. In this vein, when cross-sectional models are analyzed by year, results seems to suggest that this dynamic on tourist motivations associated with the most loyal markets of the Algarve (United Kingdom; Germany and Ireland), allows us to identify changing patterns of international tourists, which is also associated with a certain change in patterns in their spending behaviour. For instance when motivations such as sightseeing and excursions and cultural and historical resources appear as significant, the effects on daily spending are positive and tend to be higher.

This paper presents several theoretical and methodological contributions. Since the majority of tourism demand studies are longitudinal studies (Marcussen, 2011), the present research contributes to the growing literature of tourist spending analysis through the adoption of a cross-section model. In another stream of analysis, since micro-economic studies tend to integrate explanatory variables with a lower level of aggregation, the present study contributes to the need to estimate more micro studies concerning determinants of tourist spending (Sainaghi, 2012). Thus, introducing behavioural and motivational aspects could provide a better understanding of "rational" tourist choice behaviour. In light of this aspect, researching other behaviour theories could open new interesting avenues in order to better understand changing patterns of consumer spending behaviour in tourism, under the tenets of Social Exchange Theory[8] in the discussion. This last theory could be useful in order to confront them with assumptions provided by Papatheodorou (2001) who pointed out the fact that the use of traditional demand theory in tourism suffers from a number of serious drawbacks, for the reason that it ignores particularities of tourist products.

[8] Social Exchange Theory assumes that "the more a behavior results in a reward, the more individuals will behave that way. However, the more an individual receives a reward, the less valued it becomes, and the individual seeks alternative rewards through other behavior or from other sources" (Godbey and Graefe, 1991: 217 citing Searle, 1990). Thus, Emerson believes that "It is precisely social structures of this sort that violate the assumptions of neoclassical economics (e.g. "vertical organization" and oligopoly in the oil industry). Thus, I like to think of social exchange theory as developing the conceptual tools needed (longitudinal exchange relations and network structures) to deal with exactly those topics that economics theory has trouble with: market imperfections" (Emerson, 1976: 359).

Concerning the contribution to theories of tourist motivation it is important to stress, as was previously underlined, that little work has been done on the influence of different types of motivations on tourist expenditure levels (Alegre *et al.*, 2011). Thus, by exploring this topic, the present research confirms that tourist motivations for sun and sand destinations influence different levels of spending. Furthermore, these motivations are dynamic and present differences in the effects of tourist spending across the years.
In particular, in terms of the implications for policy and managing the destination of the Algarve, it is important to underline that those tourists with other motivations that go beyond the demand for traditional beautiful beach and good weather, could play an important role in boosting global tourist expenditure at the destination. One challenge for destination managers is to reengineer the conventional sun and sand product introducing more added-value according to the tourist expenditure profile, maintaining the loyal markets and at the same time attracting a second generation of sun and sea tourists (Aguiló *et al.*, 2005).

Future studies concerning the marginal effect of travel motivations on tourist spending are necessary, in order to establish some revenue frontiers in sun and sand tourism products. A comparative analysis of these results with other sun and sand destinations should be conducted, mainly with those who are direct competitors of the Algarve region.

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CHAPTER 6

FROM TOURIST PREFERENCES TO YIELD PATHS OF TOURISM DEVELOPMENT
THE CASE OF THE ALGARVE

(PAPER 5)

FROM TOURIST PREFERENCES TO YIELD PATHS OF TOURISM DEVELOPMENT
THE CASE OF THE ALGARVE

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Abstract

This paper develops new measures of tourism yield in the context of the Algarve region, a mature sun and sand destination in the south of Portugal. The proposal is to use revealed preferences to identify and assess the more high-yield preferences over a four year period. In order to contribute to the discussion of tourism yield measures, we adopt tourists' preferences as a proxy of visitor yield in order to assess the competitiveness of the Algarve. The secondary data used is provided by a self-administrated questionnaire survey applied between 2007 and 2010 to international tourists during their departure from Faro international airport, a total sample of 15542 observations. An additional theoretical contribution of this paper lies in the extended discussion about tourism and visitor yield measurements. The results obtained evidence dynamic patterns of tourists' preferences over the years, which are identified throughout the evolution of visitor yield frontiers. Further, implications for destination competitiveness are discussed.

Keywords: Tourism yield, visitor yield, tourists' preferences, consumer behaviour, competitive positioning, Algarve

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6.1 Introduction

This paper presents novel measurements of visitor yield in the context of the Algarve, a sun and sand destination where tourism demand persistently grows, in spite of the signs of destination maturity. This growth persistence contradicts the essence of maturity and motivated this research, which attempts to identify the preferences which are able to improve destination positioning.

According to Pine and Gilmore (1999) in the emerging experience economy, consumers seek unique experiences. This new demand for unique and memorable experiences leads destinations to offer a distinct value-added provision of products and services when they have already achieved a consistent, high level of functional quality. Tourists' preferences are dynamic, in particular at the level of cognitive/destination attributes which vary from country to country (Yang, Lin, and Han, 2010). New tourists are more concerned with sophistication, specialization and innovation of tourism products, but the overall attractiveness of a destination has long been regarded as a critical criterion in tourism consumer decision making and choice (Crouch, 2011). However, the large number and range of attributes of tourism products, make each tourist's experience distinct.

Hence, the uniqueness of the experience relies on the preferences declared by the tourist (Hsu, Tsai and Wu, 2009; Decrop, 1999; and Goodall, 1991;). Indeed, preferences are based on destination attributes, which can be viewed as cognitive motivations (Decrop, 1999). As such, Correia and Pimpão (2008) postulate that push motivations are declared before the destination choice, whereas pull motivations are declared during the choice process of the destination. The latter are related with the preferences tourists have about the destination. Under this theoretical background, pull motivations may be assumed as a proxy of preferences.

The choice depends on the preferences, and these in turn are a function of information about attributes. "Preferences are not what cause the consumer to choose particular goods, rather it is the fact that certain goods were chosen (obtained) that makes those goods preferred" (Hands, 2012: 8).

Mature destinations, more than just merely seeking for tourist arrivals, should seek to diversify products. This leads several countries and regions to emphasise the importance of marketing in capturing and retaining higher-yield tourists. An understanding of the yield potential of different preferences can therefore help to underpin destination marketing by both public and private sector organisations (Dwyer and Forsyth, 2008). Starting from this demand/supply paradigm, an analysis of tourism demand dynamics based on preferences is suggested in order to identify the higher-yield preferences. Under this line of reasoning, the present research was designed to answer the following question: how can tourists' preferences reveal the yield potential of international visitors in order to support the assessment of competitiveness of tourism destinations?

The contribution of this study lies within the scope of microeconomic theory, namely in the context of revealed preference theory, which is a theory that explains the choice-presupposes of human kind (Hands, 2012). This paper also looks to respond to a call from Dwyer, Forsyth and Spurr (2007a) for more research in order to explore implications of different yield measures for marketing/promotion activities based on tourists' preferences.

Thus, this theoretical framework may help understand the role of behavioural variables when used as proxies of visitor yield, helping in this way tourism destinations managers and policy makers to redefine their destinations accordingly with tourists' preferences with higher yields. Furthermore, this paper also contributes to diversify the use of yield analysis based on behavioural indicators. Results are of utmost importance for destination marketing/promotion.

This research starts by exploring the way international tourists value a number of attributes comprised by the Algarve. As this research was designed to assess both volatility and profitability of a number of preferences a preliminary set of non-parametric tests were performed to depicted the preferences that present higher volatility being those the ones that are more critical to positioning the destination. The coefficient of variation was used to measure the volatility of preferences over time. This volatility is the consequent of new demographic trends and tastes in tourism.

This research is supported by data collected from a self-administrated questionnaire survey applied to international tourists during their departure from Faro international airport. The methodology included a first selection of the preferences that present higher heterogeneity over the years and the sample consists of 15542 observations collected from 2007 to 2010 (Correia and Pimpão, 2012).

This paper identifies high-yield preferences along the ones that show higher volatility as well. Identifying the critical preferences are of utmost importance to repositioning the destination.

In the light of this, the aims of this study are:

- to suggest a methodological-based proposal to measure visitor yield, using tourists' preferences as a proxy, in order to assess the competitiveness of the destination;
- to identify turn-over frontier points inside the visitor yield matrix in order to measure dynamic patterns expressed as volatility of visitor yield and length of stay throughout the years;
- to analyse the high-yield visitors by preference;
- to contribute to the understanding of how the yield potential of preferences can help to underpin destination marketing strategies.

6.2 Literature review

6.2.1 Tourists' Preferences

Economic theory provides solutions to, among others, problems related to micro-oriented questions, such as the allocation of resources for consumption and production activities, explanations of the mechanism by which markets set prices and quantities, and further, suggests how consumers, companies and other stakeholders will react in dynamic situations (Eadington and Redman, 1991). As emphasised by McFadden (1980), modern economic theory follows the assumption that individuals adopt a market behaviour led to maximize their utility. The utility is also assumed to be defined by ordering their preferences. A preference contains random components because of different perceptions, attitudes and other intangible factors. As stated by McFadden (1980: 278),

> "preferences are defined over commodities which may have complex hedonic attributes, measured and unmeasured. Habit and experience enter through past decisions. Attitudes may enter as intervening variables, provided the way they are influenced by the market is also modeled. Demographic, economic, and social variables can modify preferences. The theory is made operational by linking the random preference model to market response probabilities".

Preferences are the prime driver of consumer behaviour. Individuals' choice is a function of preferences, and these in turn are a function of information about attributes. Preferences usually arise on a scale that results from the product's attributes perceived by the consumer (Driscoll, Lawson and Niven, 1994). Following the principle of maximum utility, consumers' preferences are subject to constraints forced upon them by available income, other resources and prices of each available commodity, in order to acquire the best basket of goods. Most theories on the subject assume that the consumer has an utility function defined by product attributes (see, *inter alia*, Lancaster, 1966; Rosen, 1974). An extension of Lancaster's Theory (1966) is presented in studies that develop micro-economic models concerning choice decisions in the tourism context (Rugg, 1973; Morley, 1992). Product attributes are understood as the set of characteristics perceived by the consumer. Assuming that tourists want to maximize utility, the destination will be a function of the preferences the individuals declared about destination attributes.

Discrete Choice Theory provides the basis for the analysis of individuals' real choices. This assumes that, unseen by the analyst but implicitly considered by tourists, the ranking of alternatives is based on "preferences" (Nicolau and Más, 2006b; and Morley, 1994). In the same vein other approaches consider hypothetical choice alternatives, and subsequently analyse the ranking or scoring that individuals give to them. This approximation is rooted in Information Integration Theory, and Social Judgement Theory, and makes the assumption that the decision-making process is capable of ranking alternatives according to preferences (Batsell and Louviere, 1991; Timmermans and Golledge, 1990). This contrasts with the revealed preference approach in that the analyst is working only with a *declaration of intent* based on preferences, and not the real purchase choice, this is the reasoning of the theory of Stated Preferences (Nicolau and Más, 2006a).

Previous theoretical approaches support the assumption of the study, which is based on the tourists' stated preferences given by the degree of importance of each destination attribute. The tourists' choice decision process is faced within a boundary of consumption possibilities which depends on several constrains that influences their preferences. Indeed, tourism yield analysis may be an adequate approach in order to analyse the consumption boundaries of consumers' preferences.

6.2.2 Tourism Yield and Visitor Yield

Several definitions of yield have been put forward in the literature. According to Scott and Breakey (2007), "yield" is a term commonly used in agriculture and finance, and its use is related to the amount which is obtained by a unit of capacity. The method has been recently adopted by the transport (aviation and cruise lines) and accommodation sectors, with the definition of monetary return per unit of capacity (*e.g.* rooms, in the accommodation sector); see, for instance, Scott and Breakey (2007) and Reynolds and Braithwaite (1997).

This concept has been extended by academics, who use yield when referring to the financial and economic gains that tourism generates. According to Pratt (2012), the definition of yield varies and means different things to different stakeholders, since it can be measured in different ways. In tourism, yield was firstly introduced by the aviation sector; however, accommodation, rental cars, cruise lines and other travel industries have also adopted this management tool (Mainzer, 2004). As an example of the application of this concept to accommodation, yield can be defined as the return in euros per room per night. The tourism yield concept is defined by Dwyer and Forsyth (1997: 224),

> "as the net benefit accruing to a host country from international visitors, that is, the benefits minus the complexity of identifying, at a national level, all the benefits and costs of tourism, each of which has differing patterns of activity and impact".

Most recent literature followed Dwyer and Forsyth (1997) who suggest that the term could include noneconomic gains within environmental, cultural and social scopes. This lead to the development of the concept of 'sustainable yield' (Northcote and Macbeth, 2006; and Becken and Butcher, 2004).

In the same vein Dwyer *et al.* (2007a) alerted that it is essential that the yield concept is defined precisely and the approaches used to measure yield outlined clearly, to ensure consistency among stakeholders. When referring to destinations, different stakeholders will have different views on the profit that should be maximised: total visitor revenue may be the profit goal for a regional tourism organisation; a rise in employment could be the aim for local councils; tax revenue or value added may constitute the profit outcome for the national government. As a consequence, each stakeholder has a different definition of the generic term "yield" as each one views profit in a different way (Scott and Breakey, 2007). A lack of detailed studies of the relationship between visitor profiles and characteristics also leads to the unclear definition of yield as applied to destinations. Becken and Butcher (2004) carried out a study, which consisted of empirically examining how visitors' characteristics related to profitability. The results of the analysis showed that, despite differences among different types of tourists, concerning expenditure and value-added patterns, the final ranking was the same when made for expenditure and for value added, but the impact on employment was different. Therefore, it can be deduced that a different mix of different visitor profiles will give rise to a different effect on total destination expenditure and tourism jobs. The calibration of the relationship between visitor characteristics and profit needs to be carried out on a destination basis (Scott and Breakey, 2007).

As previously highlighted for destinations, it is generally not the number of visitors *per se* that is the goal of tourism marketing, but the revenue associated with the visits. Moreover, it is well recognised that large numbers also imply large social and environmental impacts (Dwyer *et al.*, 2007b).

In terms of the visitor yield concept, the above definition applies more to the demand side of the industry than to the supply side and refers to visitor satisfaction with the 'value' experienced while involved in consuming products and services. Customer value is an important concept when considering consumer behaviour (Grönroos, 1997). A focus on customer value will promote an understanding of the tourist experience and enable organizations to provide what tourists want, need and expect (Dwyer, Forsyth, Fredline, Jago, Deery and Lundie, 2006).

Northcote and Macbeth (2006) suggest a concept of visitor yield which is based on their integrated tourism yield framework (ITY), which refers to the number, distribution and types of arrivals. In this sense, a high visitor yield is the one that attracts large numbers of tourists. However, Dwyer *et al.'s* (2006) established another concept of visitor yield which is mainly related to the satisfaction or "value" experienced by the visitor from the consumption of products and services, or even the quality of their tourism experience. As stated before, this research adopted preferences as proxy of pull motivations which are related to the attributes of destinations. Consequently, segmenting tourists by preferences may be an interesting contribution as a proxy of the tourists preferences yield index.

The concepts of tourism and visitor yield have been the subject of some discussion in the literature. Dwyer *et al.'s* (2006) first development was a technical report which enabled the measurement of concepts of visitor yield by first presenting and describing it. They then proceeded (Dwyer *et al.*, 2007a) with a yield analysis of the Australian inbound market, aiming to assess which were the high-yield markets, and in this way presented also an overview of different concepts of yield. Several of these measures were also applied by the authors using primary data, in order to enable a comparison of origin markets and market segments which revealed to be the higher yield under the various measures. Dywer, Forsyth, Fredline, Deery, Jago, and Lundie (2007b) finally highlighted the differences in the nature and functions of the techniques of computable general equilibrium (CGE) and Tourism Satellite Accounts (TSA) with the aim of illustrating the differences of the two techniques.

Another research was conducted by Lundie, Dwyer and Forsyth (2007), with the purpose of developing new measures of economic and environmental yield from several Australian inbound markets, together with the economic impacts of tourism from those markets. Results revealed that for some inbound markets the simultaneous achievement of relatively high economic and environmental goals is not possible.

Scott and Breakey (2007) conducted a study that used yield as a performance indicator for destination management and provided a recommendation on how the term yield should be adopted at the destination level. Several interviews were undertaken with twenty stakeholders of the tourism industry from Queensland, Australia. Results

revealed that no consensus was achieved in the understanding of how yield should be applied at the destination level.

Attempting to clarify the yield potential of different markets and segments, Dwyer and Forsyth (2008), set out to demonstrate how the economic yield of a range of visitor markets for Australia can be estimated based on CGE models. The results of their study concluded that when yield measures are based on the economic impacts of the expenditure, they provide better directions for destination tourism marketing and development planning.

Recently, two more papers discussed the tourism and visitor yield concept. Pratt (2012) estimated the economic impacts of tourism for various market segments and attempted to identify which types of tourists are higher spenders in the destination of Hawaii. Results evidenced that each visitor's spending pattern has different consequential effects. As a result, this paper, which is a follow-up from Dwyer *et al.'s* (2007b), highlights the need for further research into the means of measuring visitor yield and suggests that this should be done for different market segments in different destinations. In a recent paper Dwyer and Thomas (2012) develop new measures of tourism yield in Cambodia, South East Asia. From the authors' point of view, a reflection about the contribution of tourism expenditure to poverty reduction is required. The authors suggest that the development of measures of the economic significance of different tourist origin markets is of importance to support destination marketing and management decisions. Selecting a demand-side perspective, the paper developed expenditure measures for the top ten markets to Cambodia. Furthermore, their research revealed that the effect of tourism in Cambodia to improve the living conditions of the poor, bears little relation to the expenditure made in the destination itself.

As previously regarded in the literature, the definitions of tourism and visitor yields suffer from a lack of discussion and a consentaneous and stable methodology for its measurement. Thus, the intention of the present visitor yield analysis is to add one more dimension to this type of analysis. In fact yield measures are also a form of measuring the volatility of demand, and panel data will allow for an understanding of the volatility over the years.

6.3 Methodology

Considering that tourist preferences are heterogeneous and dynamic (Yang *et al.*, 2010), the Scheffé test (Table 6.1) was used to highlight the attributes with more dynamic patterns over the four years of data that this research comprises. Preferences with a dynamic pattern were cleanliness; cultural and historical resources; available information; closeness to home; accommodation; gastronomy; price; hospitality; sightseeing and excursions; golf facilities. Hence, these were the preferences used for the yield analysis that follows.

Table 6.1 - Scheffé test (multiple comparisons)

Dependent Variable (motivations/preferences)		Year (I)	Year (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Cleanliness	Scheffé	2009	2007	-.649*	.028	.000	-0.73	-0.57
			2008	-.630*	.030	.000	-0.72	-0.54
			2010	-.492*	.024	.000	-0.56	-0.43
		2010	2007	-.157*	.030	.000	-0.24	-0.07
			2008	-.138*	.031	.000	-0.23	-0.05
			2009	.492*	.024	.000	0.43	0.56
Cultural and historical resources	Scheffé	2009	2007	-.684*	.028	.000	-0.76	-0.61
			2008	-.472*	.029	.000	-0.55	-0.39
			2010	-.068*	.023	.034	-0.13	-0.00
		2010	2007	-.616*	.029	.000	-0.70	-0.54
			2008	-.405*	.030	.000	-0.49	-0.32
			2009	.068*	.023	.034	0.00	0.13
Information available	Scheffé	2009	2007	-.724*	.027	.000	-0.80	-0.65
			2008	-.557*	.029	.000	-0.64	-0.48
			2010	-.412*	.022	.000	-0.47	-0.35
		2010	2007	-.313*	.028	.000	-0.39	-0.24
			2008	-.145*	.029	.000	-0.23	-0.06
			2009	.412*	.022	.000	0.35	0.47
Closeness to home	Scheffé	2009	2007	-.938*	.029	.000	-1.02	-0.86
			2008	-.923*	.031	.000	-1.01	-0.84
			2010	-.242*	.024	.000	-0.31	-0.18
		2010	2007	-.696*	.030	.000	-0.78	-0.61
			2008	-.681*	.031	.000	-0.77	-0.59
			2009	.242*	.024	.000	0.18	0.31
Accommodation	Scheffé	2009	2007	-.624*	.028	.000	-0.70	-0.50

			2008	-.592*	.030	.000	-0.68	-0.51
			2010	-.409*	.023	.000	-0.47	-0.34
		2010	2007	-.215*	.029	.000	-0.30	-0.13
			2008	-.183*	.031	.000	-0.27	-0.10
			2009	.409*	.023	.000	0.34	0.47
Gastronomy	Scheffé	2009	2007	-.416*	.029	.000	-0.50	-0.34
			2008	-.404*	.031	.000	-0.49	-0.32
			2010	-.070*	.023	.034	-0.14	-0.00
		2010	2007	-.346*	.030	.000	-0.43	-0.26
			2008	-.333*	.032	.000	-0.42	-0.24
			2009	.070*	.024	.034	0.00	0.14
Price	Scheffé	2009	2007	-.190*	.027	.000	-0.27	-0.12
			2008	-.389*	.029	.000	-0.47	-0.31
			2010	-.269*	.022	.000	-0.33	-0.21
		2010	2007	.079*	.028	.047	0.00	0.16
			2008	-.120*	.030	.000	-0.20	-0.04
			2009	.269*	.022	.000	0.21	0.33
Hospitality	Scheffé	2009	2007	-.512*	.027	.000	-0.59	-0.44
			2008	-.467*	.029	.000	-0.55	-0.39
			2010	-.300*	.023	.000	-0.36	-0.24
		2010	2007	-.212*	.028	.000	-0.29	-0.13
			2008	-.166*	.030	.000	-0.25	-0.08
			2009	.300*	.023	.000	0.24	0.36
Sightseeing and Excursions	Scheffé	2009	2007	-.447*	.028	.000	-0.53	-0.37
			2008	-.427*	.030	.000	-0.51	-0.34
			2010	-.155*	.023	.000	-0.22	-0.09
		2010	2007	-.292*	.029	.000	-0.37	-0.21
			2008	-.271*	.031	.000	-0.36	-0.18
			2009	.155*	.023	.000	0.09	0.22
Golf facilities	Scheffé	2009	2007	-.079*	.028	.044	-0.16	-0.00
			2008	-.437*	.030	.000	-0.52	-0.35
			2010	.023*	.023	.793	-0.04	0.09
		2010	2007	-.102*	.029	.005	-0.18	-0.02
			2008	-.461*	.031	.000	-0.55	-0.38
			2009	-.023*	.024	.793	-0.08	0.04

Source: Own elaboration.

Table 6.2 - Sample characteristics

Variable label	*%*	*Variable label*	*%*
Age		***Family income (monthly average)***	
up to 30	31.2	up to 2000 €	15.7
31-50	48.8	2001€ - 3500€	22.4
51 and over	20.0	3501€ - 5000€	40.8
Gender		5001€ - 8000€	10.9
Male	46.3	8001€ and over	10.2
Female	53.7	***Work Situation***	
Marital status		Employed	62.3
Married	67.3	Unemployed	22.0
Single	29.9	Not active	9.3
Divorced/Widowed	2.8	Student	5.0
Education		Retired	1.4
Elementary	22.5	***Travel companion***	
Secondary	75.9	Alone	9.6
Universitary	1.6	Spouse/Family	73.0
Nationality		Friends/Group	16.8
United Kingdom	29.8	Other	0.6
Germany	24.2		
The Netherlands	5.3		
Ireland	18.1		
Scandinavia (Norway, Denmark, Sweeden, Finland)	8.9		
Others	13.7		
N (number of respondents)	**15542**		

Source: Own elaboration.

6.3.1 Data Source

The population of the study is matched to all international tourists visiting the Algarve for the purpose of holidays/leisure. Data comes from a project granted by ANA *Aeroportos de Portugal*[10] which aims to monitor passengers and tourists.

Questionnaires were administrated in the airport's departures lounge. A sample of 15542 tourists was interviewed, between the years 2007 to 2010. Regarding the demographic profile of the individuals in the sample over the four years under analysis it was observed that these are middle-aged individuals (30-51 years old) with a predominantly marital status of either married or living together. Results also revealed that in terms of the educational level and employment, a secondary degree and being employed was the predominant individual social status. The average monthly family income declared was between 3501€ and 5000€ (Table 6.2).

[10] ANA - Aeroportos de Portugal is the company responsible for the management, operation and development of the eight Portuguese airports.

6.3.2 Data analysis and construction of yield matrix analysis

Northcote and Macbeth (2006) laid out a theory whereby visitor numbers determine visitor yield, in which a market with large numbers of tourist is designated as a high 'visitor yield' market. One of the objectives of the majority of managers and operators is to increase the numbers of tourist visits, since this brings higher sales revenues. Yet, tourist expenditure per visit is the ultimate goal of tourism marketing, rather than simply the volume of tourist visits. In this study we develop visitor yield measurements starting from those tourist preferences which evidence more variability and at the same time are of the highest importance for tourists.

The visitor yield is then measured for each preference based on the total overnight stays and daily tourist expenditure. This measure is based on the concept of 'visitor yield', which is relevant to the demand rather than the supply side of the industry. This concept of tourism yield relates to the declared preferences by tourists. Finally, a ranking of tourist preferences is presented by visitor yield measurements.

In order to estimate the visitor yield value, the daily expenditure, x_i, on preference *i* corresponding to the number of visitors considered was calculated *i.e*,

$$x_i = \frac{\sum_{t=1}^{T} exp_{i,t}}{\sum_{t=1}^{T} over_{i,t}} \quad (1)$$

where T is the number of time periods considered, $exp_{i,t}$ is total tourist expenditure on preference *i* in period t and $over_{i,t}$ are total tourist overnight stays indexed to preference *i* in period t. The x_i is the average expenditure per night from a tourist with preference *i*, and consequently, the visitor yield is given by:

$$visitor\ yield_i = \frac{\sum_{t=1}^{T} over_{i,t}}{\sum_{j=1}^{k}\sum_{t=1}^{T} over_{i,t}} \times\ x_i \quad (2)$$

In order to complete the scheme of the matrix, length of stay of international tourists in the Algarve was considered as the second dimension. According to Gokovali *et al.* (2007), the length of stay was adopted to profile the tourists visiting one destination. Table 6.3 summarizes the values of the visitor yield and the length of stay, taking into account the mean, standard deviation (S.D.) and coefficient of variation (C.V.).

Table 6.3 - Visitor yield and length of stay by tourist preferences

	2007-2008						2008-2009						2009-2010					
	visitor yield a)			*length of stay*			*visitor yield*			*length of stay*			*visitor yield*			*length of stay*		
Preferences	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
Cleanliness	68.00	33.77	0.49	4.62	4.17	0.90	96.41	61.01	0.63	4.30	4.17	0.96	101.95	71.47	0.70	4.16	3.79	0.91
Cultural and historical resources	67.93	35.60	0.52	4.60	3.97	0.86	99.28	63.62	0.64	4.19	3.88	0.92	101.03	71.83	0.71	4.18	3.90	0.93
Information available	67.95	35.92	0.52	4.43	3.34	0.75	99.43	62.66	0.63	3.95	3.14	0.79	99.83	73.43	0.73	3.99	3.57	0.89
Closeness to home	66.36	33.59	0.50	4.28	3.63	0.84	95.43	59.59	0.62	4.29	4.15	0.96	98.66	69.96	0.70	4.27	4.08	0.95
Accommodation	67.71	33.75	0.49	4.56	4.00	0.87	96.65	61.58	0.63	4.21	3.91	0.92	102.41	72.45	0.70	4.09	3.52	0.86
Gastronomy	67.35	34.17	0.50	4.55	3.92	0.86	99.86	61.96	0.62	4.14	3.67	0.88	101.88	71.53	0.70	4.03	3.39	0.84
Price	67.60	32.66	0.48	4.58	4.10	0.89	97.88	62.46	0.63	4.20	4.08	0.97	102.57	72.44	0.70	4.04	3.60	0.89
Hospitality	67.75	33.47	0.49	4.69	4.40	0.93	97.42	62.00	0.63	4.31	4.26	0.98	102.61	72.68	0.70	4.16	3.70	0.89
Sightseeing and Excursions	67.70	35.10	0.51	4.61	3.90	0.84	101.68	64.40	0.63	4.05	3.55	0.87	101.66	72.09	0.70	3.91	3.19	0.81
Golf facilities	63.55	31.22	0.49	4.29	3.11	0.72	100.37	61.44	0.61	4.14	3.15	0.76	102.82	68.81	0.66	4.18	3.33	0.79

t-test visitor yield_year1/year2	0.000	(*)
t-test visitor yield_year2/year3	0.001	(*)
t-test length stay_year1/year2	0.000	(*)
t-test length stay_year2/year3	0.070	(**)

Notes for Table 6.3 - ** significant at 1% level* | *** significant at 10% level* |

a) measured in € | Year 1 – 2007-2008 | Year 2 – 2008-2009 | Year 3 – 2009-2010

Source: Own elaboration.

Furthermore, in order to identify turn-over frontier points inside the visitor yield matrix and therefore to measure dynamic patterns, standard deviation (S.D.) and coefficient of variation (C.V.) were computed. Thus, S.D. measures the dispersion of both outcomes (different length of stay and visitor yield patterns over the years). The C.V. allows for the identification of volatility patterns in a measurement which standardizes various standard variations across the different preferences. Hence, the coefficient of variation is given by,

$$CV_{it} = \frac{\sigma_{it}}{\hat{x}_{it}} \qquad (11)$$

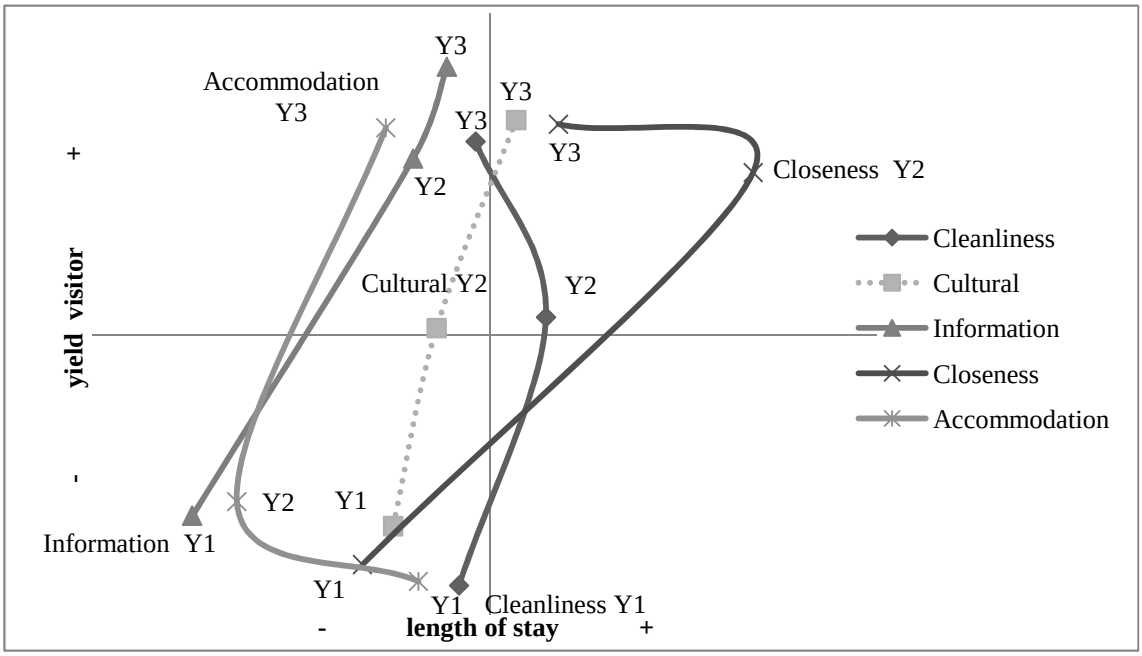
where, σ_{ij} is the standard deviation of each matrix axis (visitor yield and length of stay) and $\hat{x}_{it}$ is the mean of each matrix axis, which both represent in the vertical axis the visitor yield for preference *i* in year *t*; and in the horizontal axis the average length of stay for preference *i* in the year *t*.

6.4 Results and discussion

Since yield measures have consequences for decision making by both private and public sector tourism organisations, it is important to analyse the ranking of the selected preferences in the different measures. This analysis combines the visitor yield perspective and length of stay, which is described in Table 6.3.

Considering visitor yield values (Table 6.3), almost all preferences evidence an increasing pattern over the years. Nevertheless, length of stay patterns tends to decrease over the years. A t-test was conducted in order to confirm the existence of differences in means over the years, between the two indicators that measure preference volatility (length of stay and visitor yield). Results evidence significant differences between the means of both indicators (Table 6.3).

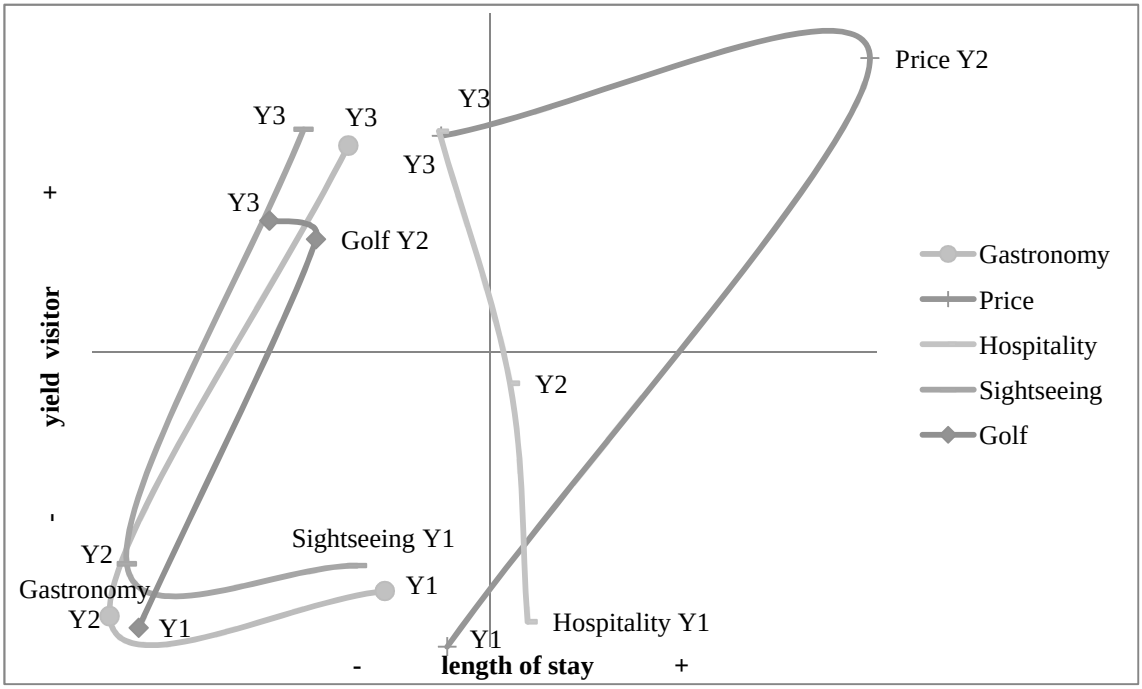
Figure 6.1 - Visitor yield preferences matrix I



Notes for Figure 1: Y1 – Years 2007-08 | Y2 – Years 2008-09 | Y3 – Years 2009-10

Source: Own elaboration.

Figure 6.2 - Visitor yield preferences matrix II



Notes for Figure 2: Y1 – Years 2007-08 | Y2 – Years 2008-09 | Y3 – Years 2009-10

Source: Own elaboration.

Following the yield matrices presented in Figures 6.1 and 6.2, from an economic point of view the most profitable preferences are those that generate higher visitor yield. Indeed this analysis may also be linked to the length of stay perspective. Those preferences that are positioned on the right-hand side of the horizontal axis are the longer stays, while the preferences positioned on the left-hand side are linked to shorter stays. Therefore, according to the results illustrated in Figures 6.1 and 6.2, and Table 6.3, over the years the more volatile preference is cultural and historical resources as the coefficient variation demonstrates. Furthermore, the results obtained by comparing the values over the years also reveal that the volatility of hospitality preferences increases between year 1 (2007) and 2 (2008), as the coefficient variation of the length of stay increases.

In 2007, the preferences that may lead to high yield spending are cleanliness, available information, and cultural and historical resources. Considering 2009, preferences with a high yield spending pattern are sightseeing and excursion, golf facilities, gastronomy and available information. In the 2009 this rank changed and reveal that preferences, such as, golf facilities, hospitality, price and accommodation are those with a high yield potential as is demonstrated by the average on visitor yield spending (Table 6.3). The preferences that make tourists long lasting their stays over the years are hospitality, cleanliness, cultural and historical resources and closeness to home. An analysis over the years shows that the preferences that retain the tourists for more time and simultaneously make them spend more money are closeness to home, and cultural and historical resources, which are the competitive yields of destination (see Figure 6.1). The preferences that evidence short stays and simultaneously promote more spending patterns are accommodation, available information, cleanliness, golf, sightseeing and excursions, hospitality, gastronomy and price. Furthermore, considering the results expressed by the coefficient of variation, volatility of closeness to home and cultural and historical resources increases in 2009, suggesting that these facilities should be improved and promoted.

These results are in line with classical hypotheses that emerge in related studies, which test how the length of stay affects tourists' spending patterns. Thus, many of them consider a positive and significant estimation related to tourist spending that used the number of nights as metric regressors (Brida and Scuderi, 2013). For the Algarve and

for mature destinations, it seems quite important to maintain a sustainable level of tourism. The main objective is not a constant increase of tourist arrivals, but rather tourism revenue (among others, see Alegre, Mateo, and Pou, 2011), expressed by high yield visitors. As the findings evidence, preferences related with cultural attributes and facilities are related with the most profitable preferences patterns, which is in line with Alegre *et al.* (2011), who established a significant relation between these attributes and a high-expenditure stratum of tourists.

Findings indicate that tourists' preferences associated with closeness to home are related with high daily expenditure and long stays in the Algarve. Thus, it may be due to the traditional sun and sand family of tourists, and also from the repeat behaviour that characterizes the international tourist profile from the United Kingdom and Germany to the Algarve. Besides the long length of stay and high visitor yield characteristics of both preferences (cultural and historical resources and closeness to home), seem to point towards another type of sun and sand tourists, who can be classified as repeaters and also as second generation of sun and sand tourists (Aguiló, Alegre and Sard, 2005). In the same vein, Kozak (2001: 802) indicated that “the more a mature a destination is, the more repeat tourists it has and the greater the stated intention score is”. Thus, since tourist repeat behaviour is evident in the Algarve, tourists’ explore extra attributes of the destination. This effect, according to their preferences, may influence the length of stay and daily spending by tourists, as suggested in this research.

6.5 Conclusions and implications

This paper illustrates a simple yet useful way of analysing tourist preferences of a destination based on a visitor yield analysis.

According to Crouch (2011), the second dimension of the critical role of destination attractions in evaluating the competitiveness of tourism destinations can be termed the value of destination attributes perceived by tourists. Previous findings showed that tourists’ preferences are dynamic (Goodall, 1991), and may constitute an important dimension for the understanding of tourists’ behavioural patterns. The present research shows how the yield potential of a destination is volatile and may change from one year to another. In the particular case of the Algarve, a sun and sand destination which benefits from high repeat-visit behaviour, results show several high yield expenditures

associated with tourist preferences. In this vein, results may support several behavioural changes in patterns from international tourists in the Algarve. Thus, as fashion and demographics change, other segments which present high-yield potential will emerge (Dwyer and Forsyth, 2008).

Results also provide evidence in accordance with Aguiló *et al.* (2005), who defend the existence of a second generation of sun and sand tourists. As such, results evidenced an increasing pattern of all preferences concerning the yield visitor indicator. This effect suggests that tourists while revisiting the Algarve are looking for historical and cultural resources, gastronomy, sightseeing and excursion and/or closeness to home. In line with previous authors this is due to a new sun and sand tourist generation which are strongly influenced by an increasing importance of cultural factors and the new demographic and social structure. Moreover, these tourists are seeking new experiences, but above all, are keen to have more than just a suntan. This second generation tourists may be responsible for the growing persistence of mature sun and sand products. Hence, we may tentatively conclude that tourists are seeking complements to justify their return and persistence in visiting the Algarve, which are the bases of the competitiveness of the destination. In this way, destination tourism management authorities should exert considerable influence in order to recover the decreasing trends of some markets. As results evidenced, tourism destination organizations must exert efforts in order to consolidate the preferences that evidence a high degree of profitability but at the same time are the most volatile over the years. Finally, tourists' preferences are an interesting index in order to match supply to the yield expenditure and length of tourists' stay patterns and consequently support an assessment of the competitiveness of destinations. Limitations are also patent in present research. Although, available research has identified and analysed visitor yield based on preferences, no analyses of yield preferences on a nationality base has been made. When measuring "Visitor Yield" via expenditure, data based on gross expenditure provides no breakdown of what goods and services have been purchased, and so the tourism sectors in the wider economy that receive the revenues of these sales cannot be identified. Another limitation lies in the fact that firm profitability is not necessarily simply indicated by expenditure. Future studies with a comparative base analysis, concerning yield visitor (base on preferences) between mature sun and sand destinations should be conducted.

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CHAPTER 7

CONCLUSIONS

7.1 Summary and discussion of results

The main objectives of this thesis addressed the study of robustness over time and prediction of Algarve's tourists' motivations according to a set of variables considered to constrain or facilitate the demand for international tourism travel. To achieve this objective, heterogeneous patterns of international tourism demand of the main tourist region of Portugal was studied. The framework in which the thesis is embedded grounds on Lancaster Theory (1966), supported by Discrete choice theory applied to tourism. Revealed preference theory was the last theoretical framework that grounds the understanding of heterogeneous patterns of international tourists' preferences in the Algarve. Main results were detailed in each Paper, here only the overall conclusions are enlightened. The interaction of these theories with the economic and non-economic determinants of international tourism demand, intends to fulfil a second objective, which aims to depict the most important non-economic determinants of international tourism demand in the Algarve.

Hence, this region was identified as the most heterogeneous and dynamic concerning macroeconomic analysis of international tourism demand. Since the six major international markets reveal dynamic patterns in terms of macroeconomic analysis, a third objective was set in order to assess motivations/preferences by years to account for heterogeneity. Finally, heterogeneous and dynamic patterns of international tourism demand were discussed and analysed, a fourth objective was achieved: understand how tourists preferences moderate the spending patterns of international tourism demand. This last objective allows to understanding the yield concept and also suggests the adoption of tourist preferences as a proxy of tourist yield in order to assess the competitiveness of the Algarve.

The quest questions from which this thesis begun were: - Where tourism demand vary the most?; How preferences are formed?; How preferences potentiate tourism demand?. The results suggest that Algarve is the major and the most steady mature destination within Portugal, able to attract and retain international tourists. Algarve tourism demand is largely explained by final household consumption, suggesting that tourism in the south of Portugal is perceived as a luxury product. This result contradicts the perception that sun and sea destinations are democratized. Further Algarve is a destination to be repeated. Even if in the next visit they tend to stay shorter periods, they spend more to

satiate the need of diversity that is more than evident. In fact the ranking order of preferences suggests that what they preferred today is not what they want tomorrow. Results evidence the persistence of some tangible attributes that are engrained at this destination, as such as safety, cleanliness, accommodation, price and gastronomy. A number of intangible attributes reveal a steady decrease in the last years, such as hospitality, culture and sightseeing, suggesting that these attributes must be improve in order to rise the demand for more on experiences than on tangibility, that some nationalities reveals. Being experience the sense of well being that leisure could provide the so-called utility. Overall these results suggest that tourism demand is to be assessed through a social-economic paradigm. This is also reinforced by the potential, some preferences (hospitality, golf, gastronomy and sightseeing) attained whether it be to increase the stay or the spending patterns.

7.2 Theoretical and methodological implications

Panel data models have received less attention in tourism demand analysis, but in our first paper the use of dynamic panel data models was the means to try to identify and analyse what factors were determinant in terms of international tourism demand for each of the regions of Portugal. The panel data model allow considered to identify the main macroeconomic factors which influenced demand. An update of the literature was carried out, and revealed a number of studies which also modelled tourism demand via panel data models (see: *paper 1*).

The second paper provides further understanding of tourism demand and its dynamic patterns, including the non-economic determinants which reinforce that tourists' behaviour is not only driven by rationality. The scope of behavioural and motivational theories provides another contribution, with confirmation arising from the significance of return intention that is significant if even when is apart from satisfaction. This is a further confirmation of what has been stated in theories of human behaviour, suggesting that past behaviour can be used to predict both behavioural intention and real future behaviour (see: *paper 2*).

Non-linear probabilistic models, such as ordered probit models, were adopted in the second paper in order to model tourists' preferences. This research provides an important contribution for tourism demand theories insofar as it evidences that non-

economic factors, such as preferences, also influence travellers' decision making processes. These preferences, which are moderated by economic and non-economic factors, prove to have patterns over time (see: *paper 3*).

An additional theoretical contribution lies in the improved understanding of "rational" tourist choice behaviour provided by behavioural and motivational aspects. Another is provided in the enhanced explanation of tourist spending patterns by the inclusion of tourist motivations. In terms of further theoretical contributions, an analysis is provided in the fourth paper, of the determinants of tourists' expenditure with the aim of measuring the value added of different types of tourism in a specific destination. Whereas most of the studies carried out on tourism demand are longitudinal (Marcussen, 2011), the adoption of a cross-section model in this study contributes to a growing literature with this method. In a different analytical stream, micro-economic studies have tended to integrate explanatory variables with a lower aggregation level, and this study fills the need for the estimation of more micro-studies of tourist spending determinants (Sainaghi, 2012). The introduction of behavioural and motivational aspects may, therefore, lead to a more thorough understanding of tourist choice behaviour. In this case, research into other behavioural theories could open up new directions for a clearer understanding of how and why patterns of tourist spending change, according to the principles of Social Exchange Theory in the discussion. The latter may be a useful mean to challenge beliefs with Papatheodorou's (2001) assumptions, in which he pointed out that there are serious impediments to the use of traditional demand theory in tourism, particularly because it does not take into account the specific features of tourism products. As far as the contribution to theories of tourist motivation is concerned, it must be stressed that, as stated above, there has been little work done on how tourist expenditure levels are influenced by different tourist motivations/preferences (Alegre, Cladera, and Sard, 2011). Therefore, the research carried out on this topic in this thesis provides confirmation that the different levels of spending are influenced by tourist motivations/preferences for sun and sand destinations. Moreover, it can be shown that these are dynamic, and reveal different impacts on tourist spending over the years (see *paper 4*).

This research also makes a contribution to the area of yield management, as requested by Dwyer, Forsyth & Spurr (2007a). As Pearce (1993) proposed, tourists' preferences

are not homogenous but dynamic, and are essential for a proper understanding of tourists' behavioural patterns. In the present research, evidence is provided of how tourists' preferences may reveal the yield potential of international visitors in order to support the assessment of competitiveness of tourism destinations (see: *paper 5*).

7.3 Empirical and managerial implications

The first paper's contribution is to enrich our knowledge of international tourism demand and how it affects all seven tourism regions of Portugal. This is achieved by identifying the various macroeconomic determinants explaining international tourism demand per region, and also the estimated elasticities. The results that this paper provides evidence that the demand patterns of international tourism vary by region, but that at root they have an origin market with similar social and economic features. It is further shown that international tourism demand for Portugal is dynamic. Another important conclusion that can be added is that of the lagged dependent variable for Portugal (0.57) and the Algarve region (0.69) which shows that tourists have a high degree of loyalty to the destinations (see: *paper 1*).

The second paper sheds light on the dynamic patterns of international tourism demand in the Algarve. As a result, destinations can tailor and extend their sun and sea product to better fit these new preferences patterns. Behavioural aspects are given precedence here over socio-demographics and economic factors in terms of their interest as an index to marry supply and new tourist preferences patterns. It can be seen that cleanliness, closeness to home, price, sightseeing and excursions are the most significant. The dynamic pattern of tourist preferences, changing year by year, provides an interesting finding, one which is seen to be in conjunction with the most loyal markets for the Algarve: The British, Germans and Irish. Tourism management authorities may be able to make use of these findings to counteract the falling numbers from markets (see: *paper 2*)

An exploration of the preferences dynamics of international tourism demand in the Algarve region was made possible based on ordered-probit regressions. According to the results, repeat tourists are "hostages" of this region and that they return because of overall satisfaction rather than any particular motive. Cleanliness is preferred by first

time visitors and by tourists travelling with their families. Culture is valued by single or divorced tourists travelling alone who seems to look for different forms of leisure, average income tourists, students or tourists with a standard level of education also value culture. Closeness to home is positively moderated by British, German, Dutch and Scandinavian tourists in the early years (2007, 2008) and the least valuable in 2009, 2010. This may suggests that the euphoria of low cost flights tends to cease over the years. Gastronomy is preferred by families visiting the Algarve for the first time, also British, German and Irish tourists valued gastronomy in 2007, but not in the following years. The price and hospitality follow the same pattern of the one suggested for gastronomy. This should, however, go hand-in-hand with upgrading other regional features such as cultural and historical resources and gastronomy, which are complementary to the sun and sea product. It is the tourist profile which should guide the focus of development of each of these attributes.

Likewise, promotions of tourism in the future should also focus on accommodation, price, hospitality, culture, sightseeing and gastronomy, which revealed over the years a steady decrease of preferences from 2008 to 2009 and 2010. Thus, suggesting that tourism in Algarve is in a decline phase and that something should be done to catch new and emerging markets as well as to improve the attributes which are critical to capture and retain tourists. What is more, in view of the nature of the main tourism product of the region, seasonality is an obviously persistent factor, and so there should be an effort to find ways to promote the region as a year-round destination. Tour operators may benefit from a knowledge of which variables (accommodation facilities, price, gastronomy, hospitality, and cultural and historical resources) influence the decisions and actions of this market and how.

At the managerial level, these results may bring useful implications for tourism management authorities. A start can be made on recouping the falling numbers in these markets, and restructuring the process of how the Algarve is marketed as a tourism product. Also important is the contribution made by a tourist motivations/preferences index and its potential to predict, the behaviour of international tourism markets in the Algarve (see: *paper 3*).

Policy and management implications for the Algarve as a destination put forward, and particular emphasis should be given to the fact that, when tourists present preferences beyond the expected ones for beautiful beaches and good weather, there are a potential for raising the global levels of tourist expenditure at the destination. Destination managers are faced with the challenge of restructuring the traditional sun and sand product by the addition of more added-value in terms of the tourist expenditure profile, while still continuing to attract a new generation of sun and sea tourists (Aguiló, Alegre, and Sard, 2005) (see: *paper 4*).

As far as strategic implications are concerned, considerable influence needs to be exerted by destination tourism management authorities to be able to recoup the falling numbers in some markets. In this research we show how the yield potential is revealed by tourist preferences. Taking the Algarve as a specific case, a sun and sea destination with high level of repeat visits, the results point towards a variety of high-yield expenditures which can be linked to tourist preferences. In the same area, the results provide evidence that changes are taking place in the preferences patterns of international tourists in the Algarve. There may also be evident that, as pointed out by Aguiló *et al.* (2005), a second generation of sun and sea tourists is coming into existence. New experiences are important for these tourists, but a sun tan is definitely a secondary concern. This new generation may enable mature sun and sea products to persist in their popularity. Such strong evidence leads to the conclusion that there is a demand from tourists for complements which justify returning and continuing to visit the Algarve, and the competitiveness of the destination may be improved by these means. This knowledge should help destination tourism managers in their efforts to reverse the downward trends of some markets. Lastly, tourist preferences provide the basis for an interesting index which enables the equilibrium between supply and yield expenditure patterns of tourists, and this can also be the basis for an assessment of the competitiveness of destinations (see: *paper 5*).

7.4 Limitations and future research directions

It is recommended that further studies take into account a wider range of years and other emerging tourism markets for Portugal, including Brazil and Russia. Also important will be the construction of models which explore the influence of preferences on tourists' choices in Portugal over the last eleven years. (see: *paper 1*).

For a fuller understanding of the heterogeneity of international tourism demand, further studies are needed on the heterogeneous patterns of tourist preferences. The present results should also be compared and analysed alongside those of other sun and sand destinations, which may give rise to an analysis of the profile of the new generation of tourists in this type of destinations. Moreover, an exploration and ranking of travel preferences is an avenue of interest and could not only identify turning points in tourist preferences, but also lead to a better understanding of tourists' choice behaviours regarding destinations. One of the limitations of the present research was the removal from the analysis of overall satisfaction. This was done as it was necessary to ensure the non-existence of multicollinearity and heteroskedasticity on regression models. The absence gave rise to a non-conclusive influence of the variable on overnight stays in the Algarve (see: *paper 2*).

There is a need for further research into the heterogeneous patterns of tourist preferences according to country of origin, which will help gain understanding of future trends in international markets across a range of countries. An extension of the research to include other destinations is suggested (see: *paper 3*)

Further research into the marginal effect on tourist spending of travel motivations is recommended, hence establishing some revenue frontiers in sun and sand tourism destinations. A comparative analysis should be carried out between these results and those of other sun and sand destinations, in particular those of the direct competitors of the Algarve region (see: *paper 4*).

There is a limitation to be found in terms of the definition of yield and the way in which it is applied to tourism destinations is not always clear. This occurs for several reasons: in the view of businesses for example, yield is equivalent to profit – the greater the yield, the greater the profit. However, destinations many have different stakeholders with a different perspective on profit and how it can be maximised. In Portugal, the Tourism Satellite Account account was cancelled in 2010, and so the intention here was merely a first-step approach to analyse the impact that each tourist preference had on yield. Therefore visitor yield which is measured, with input data coming from the surveys which were carried out on international tourists in Faro airport. Available research has identified and analysed visitor yield based on preferences, no analyses of

yield preferences on a nationality base has been made. Future studies with a comparative base analysis, concerning yield visitor (based on preferences) between mature sun and sand destinations should be conducted (see: *paper 5*). Furthermore season should be considered. Although this research show clearly that tourism demand is to be understood through a multidisciplinary perspective under the branches of socio economic theory.

APPENDICES

Appendix 1

Table 1.1 - International overnight stays in Portugal per region (absolute terms)

Year	*Algarve*	*Alentejo*	*Lisbon*	*Center*	*North*	*Azores*	*Madeira*	*Portugal*	*Country*
2000	5.054.230	19.787	557.291	38.479	143.526	19.841	1.319.271	7.152.425	United Kingdom
2001	4.946.180	20.211	545.064	34.355	157.524	20.649	1.542.855	7.266.838	
2002	5.105.892	19.296	515.841	33.774	155.414	14.754	1.561.278	7.406.249	
2003	5.034.204	24.716	463.076	51.258	138.547	17.072	1.656.306	7.385.179	
2004	4.696.490	24.433	539.124	65.685	138.514	17.939	1.598.233	7.080.418	
2005	5.051.855	21.902	465.899	67.175	149.296	44.402	1.577.656	7.378.185	
2006	5.047.026	20.951	479.489	87.816	143.627	49.612	1.429.040	7.257.561	
2007	5.398.998	21.216	555.628	77.627	155.499	48.493	1.447.683	7.705.144	
2008	4.748.598	18.363	521.958	67.566	140.733	40.792	1.764.068	7.302.078	
2009	3.824.516	16.531	381.341	56.223	116.127	32.244	1.242.699	5.669.681	
2010	3.700.951	18.213	411.828	53.844	123.680	30.304	1.156.133	5.494.953	
2011	4.238.450	25.164	436.787	72.014	126.717	29.789	1.329.640	6.258.563	
2000	2.901.539	36.773	636.957	62.145	125.795	34.879	1.212.871	5.010.959	Germany
2001	2.454.420	36.867	583.550	50.761	124.481	33.320	1.248.833	4.532.232	
2002	2.140.130	35.277	489.260	43.457	128.577	31.493	1.236.455	4.104.649	
2003	1.927.310	34.303	449.124	82.213	106.363	44.902	1.255.218	3.899.433	
2004	1.741.952	30.158	494.423	81.101	112.616	66.315	1.245.263	3.771.828	
2005	1.785.843	27.552	506.838	81.652	101.843	64.934	1.329.807	3.898.469	
2006	1.590.323	30.508	553.145	81.320	136.864	66.603	1.404.017	3.862.780	
2007	1.526.198	28.454	535.661	90.974	144.410	63.270	1.462.176	3.851.143	
2008	1.424.655	32.921	555.465	99.171	154.128	64.034	1.327.142	3.657.516	
2009	1.300.597	25.011	484.060	91.492	141.331	80.820	1.218.600	3.341.911	
2010	1.339.171	26.220	514.812	83.773	139.611	86.711	1.088.714	3.279.012	
2011	1.301.042	27.075	527.002	96.539	149.710	89.084	1.201.709	3.392.161	
2000	1.328.218	14.487	191.413	24.915	60.614	4.462	190.158	1.814.267	The Netherlands
2001	1.247.000	15.339	196.352	24.197	68.833	3.779	200.014	1.755.514	
2002	1.310.517	18.246	208.532	25.963	58.298	4.346	199.281	1.825.183	
2003	1.179.904	17.280	209.710	35.921	45.563	4.338	174.312	1.667.028	
2004	1.009.587	19.616	199.043	39.463	53.571	5.028	169.652	1.495.960	
2005	1.165.311	30.374	210.737	34.275	47.067	5.922	185.657	1.679.343	
2006	1.235.171	24.534	220.685	38.004	56.367	32.648	187.921	1.795.330	
2007	1.255.480	15.217	213.105	38.666	56.895	42.397	204.102	1.825.862	
2008	1.375.557	19.086	211.183	43.652	61.351	42.887	220.441	1.974.157	
2009	1.223.260	18.376	198.506	33.787	60.810	41.646	212.762	1.789.147	
2010	1.253.638	19.475	204.798	41.945	76.634	40.267	206.612	1.843.369	
2011	1.335.743	23.068	228.714	43.964	80.002	55.503	225.877	1.992.895	

Table 1.1 - International overnight stays in Portugal per region (absolute terms) (cont.)

Year	*Algarve*	*Alentejo*	*Lisbon*	*Center*	*North*	*Azores*	*Madeira*	*Portugal*	*Country*
2000	657.561	1.170	55.736	2.016	6.373	837	21.932	745.625	
2001	671.954	1.160	53.300	2.201	7.760	1.184	28.961	766.520	
2002	868.446	1.276	61.716	2.835	6.551	1.110	29.431	971.365	
2003	985.721	1.436	53.119	170.455	6.378	944	31.567	1.117.667	
2004	816.375	1.519	50.557	33.044	7.160	1.184	38.062	947.901	
2005	753.028	1.450	65.001	33.878	8.050	2.259	35.884	899.550	**Ireland**
2006	771.371	1.838	94.102	35.219	16.419	2.764	45.574	967.287	
2007	819.015	1.857	97.116	41.440	21.881	9.434	56.604	1.047.347	
2008	809.714	1.933	89.189	31.632	16.425	8.189	66.423	1.023.505	
2009	677.218	2.223	100.941	32.494	13.035	1.855	44.380	872.146	
2010	630.687	2.754	94.485	34.676	16.340	1.737	46.106	826.785	
2011	672.595	3.733	176.985	39.348	14.387	1.474	47.554	918.210	
2000	128.294	24.768	402.666	86.605	115.984	16.269	226.933	1.001.519	
2001	128.705	23.623	412.976	74.877	126.214	14.912	264.857	1.046.164	
2002	136.661	27.437	474.232	86.732	141.676	15.088	274.446	1.156.272	
2003	133.925	29.335	402.507	170.455	154.693	19.985	291.004	1.201.904	
2004	121.110	24.071	412.384	140.956	138.595	19.630	236.417	1.093.163	
2005	177.199	21.055	404.403	135.591	124.111	15.770	233.514	1.111.643	**France**
2006	201.562	22.549	442.096	144.079	145.465	18.226	267.140	1.241.117	
2007	261.828	27.722	489.482	155.395	179.675	19.474	308.768	1.442.344	
2008	290.552	28.353	500.737	174.311	198.970	21.127	376.438	1.590.488	
2009	322.097	29.362	491.468	154.838	196.615	18.635	382.432	1.595.447	
2010	342.974	27.699	505.039	175.106	233.348	17.600	317.650	1.619.416	
2011	346.600	33.358	583.706	191.890	268.001	17.248	490.264	1.931.067	
2000	246.133	42.333	1.013.017	156.130	274.501	8.188	102.550	1.842.852	
2001	254.465	34.151	1.035.265	160.946	282.949	8.962	135.778	1.912.516	
2002	325.950	34.842	1.050.559	163.719	346.327	9.808	137.209	2.068.414	
2003	370.527	45.761	976.930	259.060	344.792	12.409	144.717	2.154.196	
2004	415.769	60.345	1.083.521	270.633	373.884	18.524	170.286	2.392.962	
2005	508.679	61.313	1.186.122	315.960	394.981	29.565	229.395	2.726.015	**Spain**
2006	659.183	69.382	1.338.154	367.541	491.581	29.493	239.522	3.194.856	
2007	712.107	69.725	1.332.694	437.973	548.107	30.541	249.769	3.380.916	
2008	635.724	73.969	1.131.658	443.144	538.552	23.954	222.467	3.069.468	
2009	697.662	72.785	1.181.217	456.326	564.645	20.191	210.944	3.203.770	
2010	760.474	74.553	1.261.222	434.740	566.311	32.441	148.041	3.277.782	
2011	875.532	87.545	1.192.730	480.111	574.837	46.982	187.375	3.445.112	
Notes	**111.387.353**	**1.925.385**	**34.993.433**	**8.171.522**	**11.446.511**	**1.893.472**	**41.572.850**	**211.220.733**	

Source: Turismo de Portugal, IP (2012).

Table 1.2 - Macroeconomic variables of six international tourist markets of Portugal

Year	*GDPpc (€)*	*FCHpc (€)*	*HICP*	*UNP (%)*	*Country*
2000	27.200 €	17.200 €	93.1	5.4	United Kingdom
2001	27.700 €	17.600 €	94.2	5	
2002	28.600 €	18.200 €	95.4	5.1	
2003	27.600 €	17.300 €	96.7	5	
2004	29.500 €	18.500 €	98	4.7	
2005	30.700 €	19.000 €	100	4.8	
2006	32.299 €	19.800 €	102.3	5.4	
2007	33.800 €	20.700 €	104.7	5.3	
2008	29.500 €	18.000 €	108.5	5.6	
2009	25.500 €	15.600 €	110.8	7.6	
2010	27.500 €	16.900 €	114.5	7.8	
2011	27.800 €	17.200 €	119.6	8	
2000	24.900 €	14.200 €	92.4	8	Germany
2001	25.500 €	14.600 €	94.1	7.9	
2002	25.900 €	14.600 €	95.4	8.7	
2003	26.000 €	14.900 €	96.4	9.8	
2004	26.600 €	15.100 €	98.1	10.5	
2005	27.000 €	15.400 €	100	11.3	
2006	28.100 €	15.800 €	101.8	10.3	
2007	29.500 €	16.100 €	104.1	8.7	
2008	30.100 €	16.500 €	107	7.5	
2009	29.000 €	16.500 €	107.2	7.8	
2010	30.500 €	16.900 €	108.4	7.1	
2011	31.700 €	17.700 €	111.1	5.9	
2000	26.300 €	13.000 €	87.06	3.1	The Netherlands
2001	27.900 €	13.700 €	91.51	2.5	
2002	28.800 €	14.200 €	95.05	3.1	
2003	29.400 €	14.400 €	97.18	4.2	
2004	30.200 €	14.700 €	98.52	5.1	
2005	31.500 €	15.100 €	100	5.3	
2006	33.100 €	15.300 €	101.65	4.4	
2007	34.900 €	15.800 €	103.26	3.6	
2008	36.200 €	16.100 €	105.54	3.1	
2009	34.700 €	15.500 €	106.57	3.7	
2010	35.400 €	15.800 €	107.56	4.5	
2011	36.100 €	15.900 €	110.23	4.4	

Table 1.2 - Macroeconomic variables of six international tourist markets of Portugal (cont.)

Year	*GDPpc (€)*	*FCHpc (€)*	*HICP*	*UNP (%)*	*Country*
2000	27.800 €	13.000 €	84.5	4.2	**Ireland**
2001	30.600 €	13.900 €	87.8	3.9	
2002	33.400 €	15.000 €	92	4.5	
2003	35.300 €	15.700 €	95.7	4.6	
2004	37.000 €	16.200 €	97.9	4.5	
2005	39.300 €	17.300 €	100	4.4	
2006	41.800 €	18.400 €	102.7	4.5	
2007	43.500 €	19.700 €	105.6	4.6	
2008	40.500 €	19.700 €	108.9	6.3	
2009	35.900 €	17.200 €	107.1	11.9	
2010	34.900 €	16.700 €	105.4	13.7	
2011	34.800 €	--	106.6	14.4	
2000	23.700 €	12.900 €	90.46	9	**France**
2001	24.500 €	13.300 €	92.07	8.3	
2002	25.000 €	13.600 €	93.86	8.6	
2003	25.600 €	14.100 €	95.89	9	
2004	26.500 €	14.500 €	98.14	9.3	
2005	27.300 €	15.000 €	100	9.3	
2006	28.400 €	15.600 €	101.91	9.2	
2007	29.600 €	16.200 €	103.55	8.4	
2008	30.100 €	16.600 €	106.82	7.8	
2009	29.200 €	16.400 €	106.93	9.5	
2010	29.900 €	16.700 €	108.79	9.8	
2011	30.600 €	17.000 €	111.28	--	
2000	15.600 €	9.200 €	85.47	11.1	**Spain**
2001	16.700 €	9.700 €	87.88	10.3	
2002	17.700 €	10.100 €	91.04	11.1	
2003	18.600 €	10.600 €	93.86	11.1	
2004	19.700 €	11.200 €	96.73	10.6	
2005	21.000 €	11.900 €	100	9.2	
2006	22.400 €	12.600 €	103.56	8.5	
2007	23.500 €	13.300 €	106.51	8.3	
2008	23.900 €	13.400 €	110.91	11.3	
2009	22.800 €	12.600 €	110.64	18	
2010	22.800 €	12.900 €	112.9	20.1	
2011	23.100 €	13.200 €	116.35	21.7	

Notes for table 1.2: pc (per capita) Source: EUROSTAT (2012).

Table 1.3 - Definitions of macroeconomic variables from EUROSTAT

Variables	*Definition*	*EuroStat source publication*
Gross Domestic Product (GDPpc)	*Gross domestic product is an aggregate measure of production equal to the sum of the gross values added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). The sum of the final uses of goods and services (all uses except intermediate consumption) measured in purchasers' prices, less the value of imports of goods and services, or the sum of primary incomes distributed by resident producer units.*	SNA 1.128 and 2.173-2.174
Final Consumption Expenditure of Households (FCHpc)	*Household final consumption expenditure consists of the expenditure, including imputed expenditure, incurred by resident households on individual consumption goods and services, including those sold at prices that are not economically significant.* This indicator is an aggregate of consumption which incorporates, among others, consumption in recreation, culture, restaurants and hotel services	SNA 9.94 [9.45]
Harmonised Index of Consumer Prices (HICP)	*The Harmonised Index of Consumer Prices (HICP) is the measure of prices used by the Governing Council for the purpose of assessing price stability. The HICP was developed by the European Commission (Eurostat) in close liaison with the national statistical institutes and the*	

	European Monetary Institute (EMI), and later the European Central Bank (ECB), in order to fulfil the Treaty requirement for a consumer price index constructed on a comparable basis, taking into account differences in national definitions.	
Unemployment (UNP)	*The unemployed comprise all persons above a specified age who during the reference period were:* *- without work, that is, were not in paid employment or self employment during the reference period;* *- currently available for work, that is, were available for paid employment or self-employment during the reference period; and* *- seeking work, that is, had taken specific steps in a specified recent period to seek paid employment or self-employment.*	International Labour Organization (ILO) Resolutions Concerning Economically Active Population, Employment, Unemployment and Underemployment Adopted by the 13th International Conference of Labour Statisticians, October 1982, para. 10

Source: EUROSTAT (2012).

Table 1.4 - Scheffé test (multiple comparisons)

Dependent Variable (motivations/preferences)		Year (I)	Year (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Cleanliness	Scheffé	2009	2007	-.649*	.028	.000	-0.73	-0.57
			2008	-.630*	.030	.000	-0.72	-0.54
			2010	-.492*	.024	.000	-0.56	-0.43
		2010	2007	-.157*	.030	.000	-0.24	-0.07
			2008	-.138*	.031	.000	-0.23	-0.05
			2009	.492*	.024	.000	0.43	0.56
Cultural and historical resources	Scheffé	2009	2007	-.684*	.028	.000	-0.76	-0.61
			2008	-.472*	.029	.000	-0.55	-0.39
			2010	-.068*	.023	.034	-0.13	-0.00
		2010	2007	-.616*	.029	.000	-0.70	-0.54
			2008	-.405*	.030	.000	-0.49	-0.32
			2009	.068*	.023	.034	0.00	0.13
Information available	Scheffé	2009	2007	-.724*	.027	.000	-0.80	-0.65
			2008	-.557*	.029	.000	-0.64	-0.48
			2010	-.412*	.022	.000	-0.47	-0.35
		2010	2007	-.313*	.028	.000	-0.39	-0.24
			2008	-.145*	.029	.000	-0.23	-0.06
			2009	.412*	.022	.000	0.35	0.47
Closeness to home	Scheffé	2009	2007	-.938*	.029	.000	-1.02	-0.86
			2008	-.923*	.031	.000	-1.01	-0.84
			2010	-.242*	.024	.000	-0.31	-0.18
		2010	2007	-.696*	.030	.000	-0.78	-0.61
			2008	-.681*	.031	.000	-0.77	-0.59
			2009	.242*	.024	.000	0.18	0.31
Accommodation	Scheffé	2009	2007	-.624*	.028	.000	-0.70	-0.50
			2008	-.592*	.030	.000	-0.68	-0.51
			2010	-.409*	.023	.000	-0.47	-0.34
		2010	2007	-.215*	.029	.000	-0.30	-0.13
			2008	-.183*	.031	.000	-0.27	-0.10
			2009	.409*	.023	.000	0.34	0.47
Gastronomy	Scheffé	2009	2007	-.416*	.029	.000	-0.50	-0.34
			2008	-.404*	.031	.000	-0.49	-0.32
			2010	-.070*	.023	.034	-0.14	-0.00
		2010	2007	-.346*	.030	.000	-0.43	-0.26
			2008	-.333*	.032	.000	-0.42	-0.24
			2009	.070*	.024	.034	0.00	0.14
Price	Scheffé	2009	2007	-.190*	.027	.000	-0.27	-0.12
			2008	-.389*	.029	.000	-0.47	-0.31
			2010	-.269*	.022	.000	-0.33	-0.21

		2010	2007	.079*	.028	.047	0.00	0.16
			2008	-.120*	.030	.000	-0.20	-0.04
			2009	.269*	.022	.000	0.21	0.33
Hospitality	Scheffé	2009	2007	-.512*	.027	.000	-0.59	-0.44
			2008	-.467*	.029	.000	-0.55	-0.39
			2010	-.300*	.023	.000	-0.36	-0.24
		2010	2007	-.212*	.028	.000	-0.29	-0.13
			2008	-.166*	.030	.000	-0.25	-0.08
			2009	.300*	.023	.000	0.24	0.36
Sightseeing and Excursions	Scheffé	2009	2007	-.447*	.028	.000	-0.53	-0.37
			2008	-.427*	.030	.000	-0.51	-0.34
			2010	-.155*	.023	.000	-0.22	-0.09
		2010	2007	-.292*	.029	.000	-0.37	-0.21
			2008	-.271*	.031	.000	-0.36	-0.18
			2009	.155*	.023	.000	0.09	0.22
Golf facilities	Scheffé	2009	2007	-.079*	.028	.044	-0.16	-0.00
			2008	-.437*	.030	.000	-0.52	-0.35
			2010	.023*	.023	.793	-0.04	0.09
		2010	2007	-.102*	.029	.005	-0.18	-0.02
			2008	-.461*	.031	.000	-0.55	-0.38
			2009	-.023*	.024	.793	-0.08	0.04

Source: Adapted from Correia and Pimpão (2012).

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